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ARTICLE XXVIII.

Revision of the Elateridæ of the United States. By John L. Le Conte, M. D. Read October 21st, 1853.

BEFORE proceeding to the consideration of the characters by which I have been guided in my endeavour to classify the large group of Coleopterous insects herein treated of, it will be proper to allude briefly to what has been already done in relation to this branch of entomology.

After the separation of *Eucnemis* by Ahrens, *Pyrophorus* by Illiger, and a few other genera by various entomologists, the first person, who seems to have been convinced of the necessity of a systematic division of the great Linnean genus *Elater*, was Eschscholtz. This excellent naturalist published, in Thon's *Entomologisches Archiv* for 1829, a synoptic table of the divisions established upon the species then known to him. Finding, with more extensive researches, the imperfection of the views there given, he afterwards devised another table of genera, based chiefly upon the study of the species in the collection of Count Dejean.

Being prevented by death from concluding his labours, this table remained in a manuscript form for several years, but was eventually published by Mr. Laporte in the fourth volume of Silbermann's *Revue Entomologique*. Mr. Laporte took occasion, at the same time, to add several new genera to those of Eschscholtz.

The next addition, to our knowledge of the classification of this family, is due to Latreille, who, however, also died before concluding his investigations; the imperfect results of which, unfortunately in a very confused form, are published, as a posthumous memoir, in the third volume of the first series of the *Annales de la Société Entomologique de France*.

In the first volume of his *Zeitschrift für Entomologie*, Germar reprinted all of Eschscholtz's synoptic table, that relates to genuine *Elateridæ*, and then proceeded to the consideration of separate groups of genera; admitting, however, that these groups, founded upon some ideas of Eschscholtz on the value of the lobes of the tarsal joints, were purely artificial, but confessing that until the isolated genera were more fully defined, nothing could be done towards a natural classification: a view repeated by Erichson in his monograph of *Elaters* with pectinate tarsal claws, in the third volume of the same work.

Several of these artificial groups were elaborated by the editor, in the five volumes of the work just mentioned, while Erichson lent his assistance by monographing those with serrate unguis, and those with truncate prosternal spine.

A number of artificial genera have been constructed by various entomologists, who, however, with the exception of Kirby, in the *Fauna Boreali Americana*, have not suggested any ideas respecting the classification of the species.*

The genera found in Austria have been carefully described by Redtenbacher in his *Fauna Austriaca*, but unfortunately with the tendency to adopt the large number of genera founded by Eschscholtz on unimportant characters.

The group of *Eucnemides* has been revised as a separate family, by Mr. Guérin, in the *Annales de la Société Entomologique de France*, (ser. 2d., vol. 1,) where numerous very gross errors of Mr. Laporte are corrected.

More recently, Mr. Solier, in the fauna of Chili by Claudio Gay, has described a large number of South American species, which he has distributed into a large number of new genera founded upon the form of the mandibles, mentum, and the proportions of the joints of the antennæ. As no reference is made to the labours of previous investigators, and as care is taken to avoid all mention of the parts of the body, which served as the basis of earlier classifications, the result of this has been to produce confusion, which can only be removed by the comparison of the actual types of the genera established by Mr. Solier with those already known. I may also add, from the study of our native species, that the characters upon which Mr. Solier relies, especially those derived from the form of the mandibles, are difficult to perceive, and when perceived are of no value, since they vary in species which are certainly closely allied. I am happy to confirm my own opinion about this matter, by that already expressed by my friend, Dr. Schaum, in his report on the progress of Entomology during 1851, in Troschel's *Archiv*. From the impossibility of identifying any of Mr. Solier's genera, I have avoided expressing any opinion of them in the following pages.

Such being a brief sketch of the previous investigations made in this family, I have next to return my grateful acknowledgments to Dr. Melsheimer for the kind assistance rendered me by the loan of the typical specimens of all the species described by him: and to Dr. T. W. Harris for the loan of several types of species described by Say, and, also, for several very interesting nondescript species from his collection.

The descriptions in the following pages are usually diagnoses of the species, as the specific characters in most of the genera are very clear and well-defined. In the genera *Pedetes*, *Elater*, and *Cratonychus*, such is not the case, the species being difficult of recognition, even when typical specimens are before the student. Long and laboured descriptions in such cases are of no avail, and only tend to confuse; in those genera, I have thought it better to make the diagnosis include a description of all those parts of the body, which, after close comparison of *all* the species, I have found subject to change of form

* In the first volume of the *Zoological Journal*, there is a Monograph of *Cebrionidæ*, by Mr. W. E. Leach, in which several species are noted as occurring in North America. As it is unfortunately not possible to recognise any of them, the essay will not be referred to in the following pages.

or sculpture. If, consequently, any doubt still remains in the determination of the species, it results from the inherent difficulty of the subject, which would not be removed by a greater amount of detail.

Proceeding now to the principles employed in the classification of the species, we must first inquire into the natural limits of the group.

The family of Elateridæ has always been considered as closely allied to the Buprestidæ, in which also the prosternum is prolonged posteriorly and received into the excavated mesosternum; nevertheless, on comparison, great differences are found: in the Buprestidæ, although the anterior coxæ are small and globular, the acetabula in which they are received are composed partly of the epimera of the mesothorax, while in Elateridæ the acetabula, although open posteriorly, are confined to the prosternum; the prothorax thus acquires a greater degree of mobility than is seen in the Buprestidæ: the same structure is seen in the Throscites that has been just noticed in the Buprestidæ. Other differences are seen in the structure of the abdomen: the suture between the first and second segments is more or less obliterated in Buprestidæ, while in all Elateridæ it is as distinct as the other sutures.

From the other groups of serricorn pentamerous Coleoptera, the Elateridæ are distinguished by the small globular anterior coxæ and the prolonged prosternum. The combination then of the four following characters will define the family, as understood by me:

Coxæ anticæ parvæ rotundatæ, non contiguæ in prosterno sitæ, acetabulis postice hientibus; prosternum pone coxas productum, præcipue mucronatum, in mesosterno excavato receptum; abdomen suturis ventralibus omnibus distinctis; tarsi 5-articulati.

This definition includes the so-called families of Eucnemides and Cebrionides, which differ by unimportant characters, from the genuine Elaterides. The value of these characters will be presently discussed. Accompanying the four essential characters above given, there are others of great constancy, such as:

The antennæ are serrate, flabellate, or pectinate, rarely subfiliform, never clavate, or capitulate; in the males only of certain Eucnemides are the terminal joints enlarged, but they always preserve their serricorn type. The eyes are round, (in Perothops alone are they slightly oval,) and never emarginate; the antennæ are inserted in foveæ, the upper margins of which are more or less defined, usually under the side of the front, immediately in front of the eyes; in Eucnemides the fovea becomes a sinus, which contracts the front at the middle, and the antennæ approach each other, thus becoming farther removed from the eyes. The mandibles are usually small and retracted; in Cebrionides they are longer and prominent; the labrum is distinct in the true Elaterides, indistinct in the other groups; the prosternum is lobed in nearly all of the true Elaterides; not lobed in Campylus, Oestodes, Eucnemides, and Cebrionides; the head is deflexed, and the mouth entirely covered in the Eucnemides (except Melasis and Tharops;) it is applied against the lobe of the prosternum, and consequently moderately deflexed in most Elaterides; not deflexed, but free in Campylus, Oestodes, and in the Cebrionides; the posterior thighs are retractile under the dilated plates of the coxæ, except in Cerophytum, where the coxal plates are obsolete; the plate is slightly emarginate, and usually toothed at the internal angle, thus

exposing slightly the articulation; in the *Eucnemides* (except *Anelastes*) the margin is regular, and the articulation entirely concealed; the abdomen has only five ventral segments, except in *Cebrio* and an allied genus, where the fifth joint is truncate and the sixth becomes prominent. The femora articulate at the apex of the trochanters, which are thus fulcrant; the tarsi are never much dilated, occasionally furnished with membranous lobes beneath, and usually pubescent; the fifth joint is slender with two equal claws, varying in form, and usually with a small intermediate appendage terminated by two setæ. The tibiæ are usually slender, never fossorial, rarely compressed; in one genus, allied to *Cebrio*, a tendency to the fossorial form is shown.

The mentum is small, trapezoidal, and inflexed; the base of the maxillæ exposed; the latter have two distinct lobes, the outer one is never palpiform; the last joint of the maxillary palpi is usually dilated, and larger than the preceding; in *Tharops* and *Melasis*, however, the terminal joint is oval and pointed, and not much larger than the one before it; in *Adrastus* alone, of the true *Elaterides*, it is long and acuminate; and, finally, in the *Cebrionides* it is cylindrical and truncate; the labial palpi are very small except in the *Cebrionides*.

From this detail of characters, we would at first be inclined to select for the definition of our three primary groups, (admitting them to be three in number,) the insertion of the antennæ, and the structure of the abdomen, as being those of probably the greatest value. Genera are soon found, however, in which all the other characters of *Cebrio* are found, and which have the abdomen constructed as in other *Elaterides*; the form of the mandibles is obviously a character of too little value for a primary division; we are thus forced to divide the entire family into two great groups: *Eucnemides*, having the antennæ inserted in a sinus, and somewhat approximated, and the clypeus dilated anteriorly; *Elaterides*, having the antennæ inserted at the margin of the eyes, under the front, which is not dilated anteriorly, and not narrowed at the middle.

The *Eucnemides* contain three distinct types: *Melasis*, with the small acute terminal joint to the maxillary palpi, the imperfectly protected mouth, and the hardly approximated antennæ; *Eucnemis*, with moderately approximate antennæ, and convex deflexed front; *Cerophytum*, with closely approximate antennæ, and somewhat gibbous front.

The *Elaterides* divide naturally into two groups: the true *Elaterides*, with small retracted mandibles, and small labial palpi; and the *Cebrionides*, with long porrected mandibles, and cylindrical palpi, all of which are moderately elongated.

These tribes, with the exception of the true *Elaterides*, are so small, that their resolution into genera is attended with no difficulty: it is very different, however, with that large and difficult group, nor have any previous attempts to arrange its contents been attended with any success.

On examining the other groups, with a view to ascertain whether any light could be gained from them, I found, in the genuine *Eucnemides*, a remarkable correspondence in the elongated basal joint of the antennæ, and the absence of any tooth at the internal part of the coxal plates: the genus *Anelastes* makes the only exception to this latter character; and the various places given to that curious genus by different authors sufficiently

prove its anomalous nature; the tarsi, although lobed occasionally, are never inflated, or tufted beneath, as in some Elaterides; the mesosternum is similarly constructed in all the genera: I was, therefore, led to regard these as characters of importance, and to try what might be produced by their application to the large and complicated group of genuine Elaters; by this means I obtained three sets:

1. Species having the tarsi uniformly pubescent, sometimes lobed; the prosternum with a long and sharp spine; the mesosternum never protuberant; the antennæ never received in grooves.

These comprise the greater number of ordinary Elaters, and may be divided according to the length of the first joint of the antennæ, and the form of the coxal plates into several smaller groups, and, finally, into genera, as will be seen hereafter.

2. Species having the tarsi more densely pubescent in the form of tufts beneath, never lobed, but frequently swelled out; the mesosternum frequently prominent; the prosternum always lobed, and always armed with a long spine.

These are mostly large species, not so variable in the form of the front or coxal plates as the preceding group, but containing three forms, which, although not having an exact uniformity of structure, are related to each other, and are distinguished by strong contrasts from those of the first group.

a. Those in which the antennæ are received in deep grooves.

b. Those having luminiferous vesicles on the thorax.

c. Those having a prominent mesosternum.

3. Small species in which the mesosternum is also somewhat prominent, but the spine of the prosternum is short and suddenly truncate. The tarsi are pubescent, and their fourth joint is occasionally lobed. This contains only one genus: *Cardiophorus*.

With regard to the affinity of this family, I have but little to say: the earlier states of the animal will perhaps give us more information; but the time has not yet come for any rational systematic arrangement of the families of Coleoptera among themselves. We are yet too little acquainted with the comparative value of characters to subordinate the relations properly: the results thus far obtained have certainly been very imperfect, and I fear that while the zeal for making known isolated species and genera continues as great as at present, that the time is far distant when any definite results may be expected.

The relation between Buprestidæ and Elateridæ has been very much exaggerated, on account of the ease with which the form of the prosternum enables these families to be distinguished from all others with pentamerous tarsi. The only other evidence of such affinity rests in the resemblance between the larva of *Melasis*, and that of Buprestidæ; from other grounds, I have great doubt of the propriety of retaining *Melasis* and *Tharops* in this family; but as I do not know where else they can be placed, it seems necessary for the present to leave them where they have been placed by others.

The form and structure of the larvæ point more clearly to a relation with the Tenebrionidæ and Melandryadæ; but, besides many other characters, these families differ essentially in having the posterior tarsi of the imago four-jointed. The resemblance, in external appearance as well as in the general arrangement of the parts of the mouth, is, however, very considerable between some of the genera, and certain Melandryadæ, such as *Orchesia*. The development of the affinities, which exist in that direction, cannot be done, until a thorough revision of the Tenebrionidæ, with a division into groups upon ra-

tional characters, has been made: a Herculean task which might terrify the most adventurous, but which the voluminous and widely-scattered memoirs of Mr. Solier have rendered still more necessary.

The scheme of arrangement, into primary divisions, above indicated, is as follows:—

Subfam. I. EUCNEMIDES.

Antennæ in sinubus insertæ; clypeus antice dilatatus; labrum indistinctum; abdomen 5-articulatum: prosternum antice non vel vix lobatum.

Div. 1. *Melasides*.

Antennæ fere distantes; palpi maxillares articulo ultimo ovali acuto.

Div. 2. *Eucnemides* (*genuini*.)

Antennæ approximatae; palpi maxillares articulo ultimo magno, dilatato; ungues non pectinati.

Div. 3. *Cerophytides*.

Antennæ valde approximatae; palpi maxillares articulo ultimo magno dilatato; ungues pectinati.

Subfam. II. ELATERIDES.

Antennæ in foveis lateralibus, sub fronte insertæ; clypeus antice non dilatatus.

Div. 4. *Elaterides* (*genuini*.)

Mandibulæ parvæ, labrum distinctum; abdomen 5-articulatum; palpi labiales breves, maxillares articulo ultimo maiore præcipue dilatato: prosternum præcipue lobatum.

Div. 5. *Cebrionides*.

Mandibulæ elongatæ, porrectæ; labrum indistinctum; prosternum non lobatum; abdomen sæpe 6-articulatum; palpi omnes longiusculi, articulo ultimo cylindrico, truncato.

N. B.—The Catalogue of the described Coleoptera of the United States, by Dr. Mel-sheimer, being intended merely as an index to descriptions, has not been quoted in this essay for any changes in nomenclature there introduced, as if retained, without special reason and reference, they were intended as mere suggestions, and not as contributions to science.

Div. 1. MELASIDES.

I have constructed this group from two genera, *Melasis* and *Tharops*, which differ from *Eucnemis* by the following characters:—

The head is large, so that the eyes, which are small, become entirely disengaged from the thorax; the antennæ are inserted in emarginations of the clypeus, but are more widely separated at the base than in *Eucnemides*: the clypeus is emarginate anteriorly in one genus, but the labrum is indistinct: the last joint of the maxillary palpi is oval and acute, very little larger than the preceding joint: the prothorax beneath is truncate, the suture

of the prosternum does not reach the anterior angles of the thorax, but is continued directly to the apical margin of the inflexed portion.

The mandibles, although short, trigonal, and without any tooth, are more prominent than in the genuine *Eucnemides*: the anterior margin of the sinus for the antennæ is very distinct, and even elevated, but the posterior margin is obliterated in one of the genera (*Tharops*.) The margin of the prosternum does not seem to abut against the mandibles, so as to enclose and protect the mouth as in the two other divisions of the *Eucnemides*: the gula is corneous, and extends as far back as the sides of the head, which, though deflexed, is really inserted by a narrow neck: the anterior margin of the prosternum is furnished with a large inflexed membranous portion, abutting against the gula, and supported by two corneous pillars. I have very great doubts whether this division should be included in the present family, but as I have not yet discovered any other place for it, it must remain for the present.

MELASIS *Oliv.*

1. *M. pectinicornis*, nigro-piceus, cylindricus, tenuiter fulvo-pubescent, capite confertim punctato, subcanaliculato, thorace latitudine brevior muricato, lateribus omnino rectis, postice angustato, angulis anticis porrectis, posticis acutis parvis prominulis, elytris confertim scabris distincte striatis, pedibus antennisque rufescentibus, his articulis 2—6 sensim paulo latioribus, 7—11 valde transversis intus productis. Long. .26—.32.

Melsheimer, *Proceed. Acad. Nat. Sc.* 2, 148.

Pennsylvania, Dr. Melsheimer; Ohio, Dr. Schaum. This genus is easily distinguished from the next by the broad and compressed legs: in our species the second joint of the antennæ is nearly as large as the third. The abdomen has an obtuse elevated compressed tubercle at the apex. The clypeus is slightly emarginate at tip, and the small labrum is thus rendered visible.

Closely allied to this, but evidently a different species, and possibly even a new genus, is the following, which has not been found since its description by Say.

Eucnemis quadricollis, "*Body* piceous black with yellowish hairs: *head* with crowded large punctures, longitudinally confluent on the vertex: *antennæ* rather distant at base, not seated in approximated sinus, but under frontal elevations: second joint more robust than the third, and equally long: fourth joint rather longer than the third: remaining joints obconic subequal, the last a little longer: *palpi* terminal joint oval: *thorax* transverse quadrate with punctures like those of the head, but not much confluent: anterior angles rounded: lateral edges nearly parallel, very slightly contracted towards the posterior angles, which are nearly rectangular, a little acute, not continued backward beyond the line of the base: *elytra* with punctured striæ, and minutely punctured interstitial lines: *pectus* with less crowded punctures than the thorax, middle segment very broad: no groove: *feet* like all beneath dark piceous: *tarsi* a little paler. Length over one fourth of an inch." Indiana. (Say, *Trans. Am. Phil. Soc.* 6, 186.)

THAROPS *Lap.*

1. *T. ruficornis niger*, tenuiter pubescens, capite thoraceque scabro-punctatis, hoc quadrato, lateribus fere rectis, angulis posticis acutis, linea dorsali pone medium acute impressa, elytris scabro-

punctatis, striis punctatis, luteo-flavis, humero dimidioque postico fuscis, pedibus antennisque rufis, his articulo 3^{io} sequente paulo longiore; femoribus infuscatis. Long. .21—.3.

Le Conte, Proc. Acad. Nat. Sc. 6, 46.

Melasis ruficornis Say, Journ. Acad. Nat. Sc. 3, 166.

Eucnemis (*Nematodes*) *ruficornis* Say, Trans. Am. Phil. Soc. 6, 187.

Missouri, near Booneville. One specimen has the elytra entirely yellow. The antennæ of the male are strongly flabellate from the fourth joint: the apex of the abdomen of both sexes has three small prominences beneath, of which the middle one is crest-like, and the lateral ones tuberculiform. This species differs from the next by the less elongated third joint of the antennæ.

2. *T. obliquus*, niger, tenuiter pubescens, capite thoraceque scabro-punctatis, hoc quadrato, lateribus ad apicem paulo rotundatis, angulis posticis acutis, linea dorsali pone medium acute impressa: elytris scabris, striis punctatis, sutura usque ad medium late luteo-testacea, pedibus antennisque rufo-testaceis, his articulo 3^{io} sequentibus duobus æquali, femoribus infuscatis. Long. .23—.32.

Le Conte, Proc. Acad. Nat. Sc. 6, 46.

Eucnemis obliquus Say, Trans. Am. Phil. Soc. 6, 187.

Ohio, New York, New Hampshire. In six specimens, I can discover no sexual differences: the fourth joint of the antennæ is a little less dilated in one than in the other five: the antennæ after the fourth joint are strongly serrate, almost pectinate, the joints gradually becoming more transverse: the third joint is slender, and as long as the fourth and fifth together. The apex of the abdomen, as in the preceding species, has three small elevations.

Div. 2. EUCNEMIDES.

This division is sufficiently characterized by having the front slightly and uniformly convex, the antennæ moderately approximated, inserted in a deep sinus, with the clypeus expanding anteriorly: the labrum appears merely as an indistinct margin to the clypeus: the prosternum is truncate anteriorly: the lobe seen in *Elaterides* is represented by a margin separated by an impressed transverse line: the lateral suture is nearly always straight, in *Anelastes* alone, a little curved, and meets the lateral margin of the thorax at the anterior angle: the posterior spine is short and usually truncate, somewhat as in *Cardiophorus*: the anterior part of the sides of the prothorax reaches the eyes, which are thus partially concealed. The coxal plates are always distinct, frequently very broad: the first joint of the antennæ is always long; the last joint of the maxillary palpi always dilated, and usually large: the ungues either entire, or with a single tooth at the middle.

I have removed from this division *Melasis* and *Tharops*, for reasons before given, and, therefore, modify the synoptic table of genera given by me in the Proceedings of the Academy of Natural Sciences, vol. 6, p. 45, to suit this change of classification.

A. Thorax subtus non sulcatus:

Coxæ posticæ laminis angustis;

intus quadrangulariter paulo dilatatis;	-	-	-	<i>Anelastes</i> .
intus non dilatatis	-	-	-	<i>Hylochaeres</i> .

- Coxæ posticæ laminis magnis;
 intus sensim valde dilatatis, tarsi antichi articulo 1^{mo} vix longiore Emathion.
 intus subsubito dilatatis (3 art. 8-11 elongatis) - - Epiphanis.
 intus sensim maxime dilatatis (3 art. 9-11 elongatis) - Euryptychus.
- B. Thorax subtus ad latera sulcatus; (coxæ laminis magnis:)
 Tarsi articulis 1-3 non lobatis.
 Antennæ tenues, subcylindricæ - - - - Fornax.
 Antennæ serratæ vel pectinatæ - - - - Eucnemis.
 Tarsi articulis 2-4 breviter lobatis - - - - Galba (Dendrochaes.)
- C. Thorax subtus ad prosterni latera sulcatus: (coxæ laminis mediocribus.)
 Tarsi non lobati - - - - - Microrhagus.

The native species belonging to these genera have been enumerated by me in the Proceedings of the Academy of Natural Sciences above mentioned. For the purpose of making the present paper complete, I will here add, to what is there contained, diagnoses of Say's species, which are there only mentioned by name. It is necessary first to state, that I have united the genus *Isarthrus* *Lec.* with *Fornax*, as being not sufficiently distinct. The genus *Onychodon* *Newman*, of which I have procured the typical species, must also be united with *Fornax*: from the very loose manner in which Newman's descriptions were drawn up, the affinity of *Onychodon* to the *Eucnemides* has not been recognised; nor is there any thing in his description (except the lateral grooves for the reception of the antennæ) which indicates it to be other than a true *Elateride*.

ANELASTES *Kirby.*

1. *A. Druryi*, obscure rufo-piceus, subcylindricus, opacus, thorace transverso convexo, lateribus rotundatis angulis, posticis parvis divergentibus, subtiliter scabro, postice canaliculato, elytris striis profundis, interstitiis convexis, scabris. Long. .45—.6.

Kirby, Trans. Linn. Soc. 12, tab. 21, fig. 2; *Guérin*, Ann. Ent. Soc. Fr. ser. 2d, 1, 17.

Silenus brunneus *Latreille*, Ann. Ent. Soc. France, 3, 129.

Southern States, not rare. The front, as in the next species, is faintly channelled anteriorly, the whole upper surface is more scabrous than in the next species, and the sides of the thorax are less rounded: the dilated portion of the posterior coxal plates is emarginate and toothed, a character seen in no other genus of this division.

2. *A. Latreillei*, obscure rufo-piceus, subnitidus, thorace transverso convexo, subtiliter parce granulato, postice canaliculato, lateribus valde rotundatis, angulis posticis subdivergentibus, elytris profunde striatis, interstitiis subtiliter rugosis et scabris. Long. .4—.5.

Lec. Proc. Acad. Nat. Sc. 6, 47.

California, collected in the interior of the country by Mr. Child.

HYLOCHARES *Latr. Guérin.*

1. *H. nigricornis*, subcylindricus, crassiusculus, ater, opacus, capite scabro canaliculato, thorace subtransverso, convexo, lateribus late rotundato, scabro, profunde canaliculato, utrinque ad medium et ad basin transversim profunde impresso, angulis posticis minutis, elytris striis profundis punctatis, interstitiis convexis scabris, antennis pedibusque obscure rufo-piceis. Long. .3.

Lec. Proc. Acad. Nat. Sc. 6, 47.

Melasis nigricornis *Say*, Journ. Acad. Nat. Sc. 3, 165.

One specimen, Ohio, Dr. Schaum. The robust subcylindrical form gives it a strong resemblance to the species of the preceding genus, from which it differs principally in having the plates of the posterior coxæ not dilated internally, and the fourth joint of the tarsi slightly lobed. It is awkward that the specific name should belong to a species with brown antennæ.

EMATHION Lap.

1. *E. atropos*, elongatus, postice paulo angustatus, nigro-piceus, tenuiter fulvo-pubescent, capite thoraceque rufo-piceis, scabris, hoc latitudine non brevior, lateribus ante medium rotundatis, angulis posticis mediocribus acutis, canaliculato, utrinque ante medium foveato, et pone medium transversim impresso, elytris scabris, tenuiter fere obsolete striatis. Long. .32.

Lec. Proc. Acad. Nat. Sc. 6, 47.

Eucnemis atropos Say, Trans. Am. Phil. Soc. 6, 187.

One specimen, Louisiana, Dr. Schaum. The third joint of the antennæ is longer than the fourth, and the last six joints are slightly enlarged: the last being, probably, a character belonging to the male: the fourth joint of the tarsi is slightly lobed beneath: in Say's description, by an error commonly called clerical, the last instead of the fourth joint is said to be dilated.

2. *E. penetrans*, valde elongatus, postice paulo angustatus, ater, subtilissime fulvo-pubescent, subtiliter confertissime scabro-punctatus, fronte linea tenuissima lævi, thorace latitudine sesqui longiore, lateribus parallelis antice rotundatis, pone medium canaliculato, utrinque obsolete bifoveato, elytris tenuiter striatis, antennis pedibusque rufo-piceis. Long. .22—.3.

Lec. Proc. Acad. Nat. Sc. 6, 47.

Georgia, rare. In my former description, I only mentioned the two anterior foveæ of the thorax, but on re-examination, I find that the posterior pair, just behind the middle, are also visible: the sixth joint of the antennæ, in this species, is not more than half the size of the seventh, while, in the preceding, they are equally enlarged.

3. *E. frontosus*, nigro-piceus, modice elongatus, griseo-pubescent, capite punctato, linea frontali vix distincta, thorace subtransverso, lateribus parallelis antice rotundatis, confertissime scabro-punctato, postice canaliculato, utrinque vix obsolete foveato, elytris (parallelis?) scabro-punctatis, tenuiter fere obsolete striatis. Long. .2.

Eucnemis frontosus Say, Trans. Am. Phil. Soc. 6, 187.

Epiphanis canaliculatus Lec. Proc. Acad. Nat. Sc. 6, 46.

One female specimen, Pennsylvania. On comparing this with the preceding species, I do not find sufficient differences to warrant their being retained in separate genera: the fourth joint of the tarsi, however, is smaller, and is not lobed: the form of body is a little stouter, but is different from that of *Epiphanis* from the thorax not being regularly narrowed in front: the plates of the posterior coxæ, so far as I can examine them, appear to be gradually dilated as in the two preceding species, not suddenly dilated and subtruncate as in *Epiphanis cristatus*: they are, however, pushed out of place by the pin, and cannot be properly examined: the third joint of the antennæ is a little longer than the fourth: the eleventh is nearly as long as the two preceding. This is evidently Say's species, although, by some strange oversight, I failed previously to identify it as such.

EPIPHANIS *Esch.*

1. *E. cristatus*, nigro-piceus, griseo-pubescent, capite punctulato, fronte cristata, thorace subtransverso, antrorsum valde angustato, lateribus rotundatis, subtilius dense punctato, linea dorsali angustata lævi, angulis posticis productis, elytris parallelis, punctatis, tenuiter fere obsolete striatis, antennis pedibusque rufo-piceis. Long. .20.

Le Conte, Proc. Acad. Nat. Sc. 6, 46.

One specimen found at New York. This species agrees in the form of the body, as well as in all its generic characters with *E. cornutus* *Esch.* The punctures of the upper surface are not scabrous, and by the great narrowing of the thorax in front, the form of body, usual in the Elateridæ, is at length reached: the last four joints of the antennæ together are equal in length to all the rest: the third is hardly longer than the fourth: the fourth joint of the tarsi is not at all lobed, and the first joint of the anterior pair is as long as the two following united. It is distinguished from the preceding, as well as the next genus, by the plates of the posterior coxæ being more suddenly dilated, and truncate posteriorly, so that they do not extend farther at the middle than at the internal margin.

E. cornutus *Esch.*, Zool. Atlas 1, 10, tab. 4, fig. 6; Mann. Bull. Mosc. (1843) 238: is from Sitkha; it is unknown to me, and seems to differ from the one described above, by its reddish brown colour, with only the head and thorax black, and more prominent crest forming a short horn.

EURYPTYCHUS *Lec.*

1. *E. heterocerus*, rufo-castaneus, helvo-pubescent, thorace transverso, antrorsum valde angustato, lateribus præcipue antice rotundatis, subtiliter dense punctato, angulis posticis paulo productis, elytris a basi subangustatis, striis tenuibus, interstitiis subtiliter scabro-punctulatis. Long. .37—.52.

Le Conte, Proc. Acad. Nat. Sc. 6, 46.

Eucnemis heterocerus Say, Trans. Am. Phil. Soc. 6, 186.

Pennsylvania, rare: two specimens from Rev. D. Ziegler and Mr. Rathvon. The last three joints of the antennæ are as long as the preceding, leaving out the elongated first joint: the third is nearly twice as long as the fourth. The general form is that of true *Elater*, yet, although differing so much in appearance, the distinction of this genus from *Emathion* is obscure. Neglecting the form of the antennæ as possibly sexual, and the fourth tarsal joint, as it is not lobed in one species of *Emathion* above described, we find no differences left, except that, in the present genus, the first joint of the anterior tarsi is as long as the three following: the fourth joint is two-thirds the length of the third, and cylindrical; and the plates of the posterior coxæ are very much more dilated internally, and at the middle extend much farther than at the inner margin.

FORNAX *Lap.*

Among our species of this genus, which is synonymous with *Dirhagus* *Esch.*, are some in which the claws of the tarsi are suddenly dilated at the base, with the extremity of the dilated portion forming a prominent tooth. The largest of these species is the type of Newman's genus *Onychodon*. The species separated by me, under the name *Isarthrus*, must also be placed in this genus, as the slight difference in the length of the third joint

of the antennæ, and the absence of the very short lobe of the fourth joint of the tarsi, are insufficient characters. Our species may, therefore, be arranged in three groups.

A. Tarsi articulo 4^{to} breviter lobato; unguis ad medium fortiter dentati.

1. *F. orchesides*, fusco-piceus, opacus, helvo-pubescent, capite thoraceque dense scabro-punctulatis, hoc antrorsum angustato, latitudine vix brevior, lateribus rotundatis, angulis posticis productis, basi ad medium tripunctata, elytris a basi vix angustatis, subtiliter scabro-punctulatis, tenuiter striatis, pedibus antennisque ferrugineis, his versus apicem attenuatis, articulo 3^{io} sequente vix longiore. Long. .68.

Onychodon orchesides Newman, Entomological Magazine, 5, 384.

One specimen found at Racine, Wisconsin, given me by Dr. Hoy. This is by far the largest species of *Eucnemide* yet found in the United States. It seems to be very rare; the unique specimen described by Newman was found at Trenton Falls, in the state of New York.

2. *F. bicolor*, supra fuscus, opacus helvo-pubescent, capite thoraceque dense scabro-punctulatis, hoc antrorsum angustato, latitudine vix brevior, lateribus antice rotundatis postice subparallelis, angulis posticis productis, elytris a basi angustatis confertim scabro-punctulatis, tenuiter striatis, subtus ferrugineus, antennis articulo 3^{io} sequente longiore. Long. .37.

Lec. Proc. Acad. Nat. Sc. 6, 47.

Hylocharus? bicolor Melsheimer, Proc. Acad. Nat. Sc. 2, 149.

One specimen found at New York, given me by Mr. Willcox. Resembles in general characters the preceding, but is very much smaller: the middle lobe of the base of the thorax is shorter, and appears to be only bipunctate: the elytra are regularly narrowed from the base, and the third joint of the antennæ is one-third longer than the fourth: a portion of the antennæ is wanting, so that I do not know if they are more slender externally, as in *F. orchesides*.

B. Tarsi articulo 4^{to} breviter lobato; unguis non dentati.

3. *F. badius*, fuscus, elongatus, helvo-pubescent, capite thoraceque dense subtilius punctatis, hoc latitudine longior, antrorsum subangustato, lateribus vix late rotundatis, angulis posticis productis paulo inflexis, elytris a basi vix angustatis, scabro-punctulatis, tenuiter striatis, pedibus antennisque obscure ferrugineis, his articulo 3^{io} sequente duplo-longior, versus apicem non attenuatis. Long. .31.

Lec. Proc. Acad. Nat. Sc. 6, 47.

Dirhagus badius Melsheimer, Proc. Acad. Nat. Sc. 2, 149.

Dirhagus rufipes? Melsheimer, Proc. Acad. Nat. Sc. 2, 150.

Two specimens found in Pennsylvania: the second joint of the antennæ is longer than the two preceding species, being one-half as long as the third: the fourth joint is shorter than the fifth, which is equal to the following: the third joint is about twice as long as the second, or the fourth. The antennæ are nearly filiform, not being attenuated towards the tip, as in *F. orchesides*: the unguis of the tarsi are dilated at base, but not toothed: the margin of the thorax is slightly curved inwards at the posterior angles, while in the preceding species it is straight at that part. One specimen has the front indented with a slight longitudinal fovea, and is probably *Dirhagus rufipes* Mels.

4. *F. cylindricollis*, niger, valde elongatus, tenuissime fusco-pubescent, thorace latitudine longiore, lateribus parallelis, ante medium paulo angustato et rotundato, sat dense punctato, pone medium profunde late exarato, angulis posticis paulo productis, elytris a basi vix angustatis, punctatis, striis obsoletis, suturali sola conspicua, antennis articulo 3^{io} sequente duplo longiore, versus apicem non attenuatis. Long. .26—.31.

Lec. Proc. Acad. Nat. Sc. 6, 47.

Eucnemis cylindricollis Say, Trans. Am. Phil. Soc. 6, 188.

Middle, Southern, and Western States. The proportions of the joints of the antennæ are as in the preceding: the legs are black, with the tibiæ and tarsi slightly piceous. This species very much resembles the next: the striæ of the elytra are, however, obsolete, the sutural one alone being distinct, and the punctures are more distinct, and less confluent.

5. *F. striatus*, niger, valde elongatus, tenuissime fusco-pubescent, thorace latitudine longiore, lateribus postice parallelis, antice paulo rotundatis, confertim subtilius punctato, pone medium late exarato, angulis posticis paulo productis, elytris a basi subangustatis, confertim rugose punctatis, striis distinctis, interstitiis paulo convexis, pedibus antennisque rufescentibus, his articulo 3^{io} sequente duplo longiore, versus apicem non attenuatis. Long. .22—.28.

Lec. Proc. Acad. Nat. Sc. 6, 47.

Middle and Southern States. The feet are sometimes almost rufo-piceous, the antennæ have also a reddish tinge in one specimen: the joints have the same relative proportions as in the two preceding species.

C. Tarsi articulo 4^{to} non lobato; ungues non dentati.

6. *F. spretus*, elongatus, fusco-niger, pubescens, thorace latitudine fere brevior, antrosum angustato, et lateribus rotundato, dense sat grosse punctato, angulis posticis modice productis, elytris sat grosse confluentur punctatis, striis tenuibus, interstitiis externis paulo convexis, pedibus antennisque rufis, his versus apicem paulo crassioribus, articulis 2-12 subæqualibus. Long. .2.

Isarthrus spretus Lec. Proc. Acad. Nat. Sc. 6, 48.

One specimen, Lake Superior: the punctures of the head are a little smaller than those of the thorax; there is a faintly impressed fovea at the vertex, which is perhaps accidental.

EUCNEMIS Ahrens.

From Fornax, this genus seems to be essentially distinguished by the plates of the posterior coxæ being less dilated, and truncate posteriorly, so as to extend no farther at the middle than at the internal margin. The antennæ are either serrate or pectinate, but never filiform, as in Fornax: the ungues are not dentate, and the fourth joint of the tarsi is slightly lobed. The first species, from the bad condition of the specimen in my collection, was incorrectly stated by me to have the tarsi not lobed.

1. *E. clypeatus*, fusco-niger, fusco-pubescent, capite thoraceque confertim punctatis, hoc latitudine vix brevior, lateribus postice parallelis, ante medium rotundatis, elytris striis vix distinctis, confluentur punctatis, pedibus antennisque totis rufo-testaceis, his serratis, articulo 3^{io} sequente plus sesqui longiore. Long. .16—.18.

Say, Trans. Ann. Phil. Soc. 6, 189.

Elater clypeatus Say, Ann. Lyc. of New York, 1, 266.

One specimen from Pennsylvania, given me by Dr. Zimmermann; another from Tennessee, sent by Dr. Schaum.

2. *E. amaenicornis*, niger, opacus, vix pubescens, capite thoraceque confertim minus subtiliter punctatis, hoc latitudine non brevior, antrorsum paulo angustato, lateribus late vix rotundatis, elytris confluentur punctatis, striis sat profundis, versus suturam tendentibus; pedibus testaceis femoribus infuscatis, antennis longe pectinatis, piceis articulis 2 et 3 testaceis, hoc sequente sesqui longiore. Long. ·12—·16.

Say, Trans. Am. Phil. Soc. 6, 189.

Common in the Middle and Southern States. Some of the specimens have the sides of the thorax more rounded than others; these are probably females: the branches of the antennæ do not, however, appear to be shorter than usual in such specimens: the elytra in all of them are tolerably strongly narrowed from the base to the tip, and the striæ on the middle of the disc consequently run together, and vanish before reaching the apex. The head is subject to abnormal impressions: in one specimen there are three occipital grooves: in another, two faint ones just behind the antennal sinus: in a third, there is a broad frontal fovea, such as has been already mentioned in some species of Fornax.

GALBA *Esch. Guér.*

The North American species of this genus is unknown to me: a single specimen was obtained in Georgia by my father, who sent it to Count Dejean. On account of the lobes of the second, third, and fourth joints of the tarsi being shorter than in the Galbæ of the eastern continent, Mr. Guérin proposed to form of this species a subgenus *Dendrocharis*. His description and figures are found in the *Annales de la Société Entomologique de France*, Ser. 2d, vol. 1, 193; tab. 6, fig. 60—63. As the work is not generally available to American students, I add a translation of Mr. Guérin's description:

G. flavicornis, "Length 9—12 millimetres;" (·35—·47 unc.) "Brown, smooth, convex, with the sides parallel. Antennæ strongly pectinate, a little thicker towards the apex; with the first two joints brown, and the others orange yellow. Anterior tibiæ broad, compressed, ciliate externally, with stiff bristles; tarsi capable of being folded along the tibiæ, with second, third, and fourth joints dilated beneath; the dilatations much less elongated than in *Galba marmorata*."

MICRORHAGUS *Esch.*

A. *Tarsi articulo 4^{to} paulo dilatato sublobato.*

[*M. pygmaeus*, fusco-niger, brevissime fusco-pubescens, fronte subcanaliculata, thorace latitudine vix brevior, antrorsum modice angustato, lateribus late rotundatis, sat grosse punctato, angulis posticis productis valde carinatis, linea marginali antice furcata, elytris a basi subangustatis, fortius punctatis, vix striatis, pedibus obscure testaceis. Long. ·18.

A male specimen sent me by Dr. Schaum.* This species has the antennæ subflabellate, as in *Eucnemis amænicornis*, but as the pectoral grooves are at the side of the prosternum, it cannot be associated with that species. It differs from all the following species in having the marginal line of the thorax double before the middle, and the posterior angles more strongly carinate: the pectoral grooves are well defined and broad: the ungues of the tarsi are slender.]

* This European species is described in connexion with our native species for the purpose of exhibiting the specific characters more clearly; references are, therefore, omitted.

1. *M. imperfectus*, ater brevissime fusco-pubescent, thorace latitudine brevior, lateribus antice fortius rotundatis, punctato, linea dorsali tenuissima lævi, angulis posticis modice carinatis, linea marginali medio obsoleta, elytris fortius punctatis, vix striatis, pedibus rufis. Long. .22.

Lec. Proc. Acad. Nat. Sc. 6, 48.

New York and Maryland. The antennæ of the male are dark coloured and slightly pectinate, those of the female are but little darker than the feet, and moderately serrate; the front in one specimen is channeled, but this is a character of but little value in the present group of insects. The marginal line of the thorax is dislocated and interrupted at the middle, the portion from the anterior angle being far above the short posterior portion, which is connected with the base; the pectoral grooves are indistinct posteriorly; the nails of the tarsi are dilated and toothed at the middle.

2. *M. subsinuatus*, ater vix fusco-pubescent, thorace latitudine brevior, antrorsum subangustato, lateribus obliquis subsinuatis non rotundatis, punctato, postice canaliculato, ad apicem transversim marginato, angulis posticis planis paulo inflexis, linea marginali dislocata, elytris fortius rugose punctatis, vix striatis, tarsis testaceis. Long. .2.

LeConte, Proc. Acad. Nat. Sc. 6, 48.

Eucnemis triangularis Harris, Trans. Hartford Nat. Hist. Soc. 72.

One male specimen found in the upper part of Georgia. The antennæ are three-fourths as long as the body, and very slightly serrate; the pectoral grooves are deep and well defined; the marginal line from the anterior margin of the thorax in this species almost forms a junction with the carina of the posterior angle, which, from the flattening of the latter, is pushed out of its normal position, and forms the lateral edge; the basal portion of the true marginal line is deflexed as usual, and becomes obsolete in front of the middle. The claws of the tarsi are not toothed.

3. *M. triangularis*, ater, pubescens, thorace latitudine brevior, lateribus parallelis, apice summa rotundatis, confertim punctato, angulis posticis acutis, breviter fortius carinatis, linea marginali dislocata, elytris a basi angustatis, apice obtusis, fortiter punctatis vix striatis, pedibus testaceis, antennis piceis. Long. .1—13.

LeConte, Proc. Acad. Nat. Sc. 6, 48.

Elater triangularis Say, Journ. Acad. Nat. Sc. 3, 170.

Eucnemis triangularis Say, Trans. Am. Phil. Soc. 6, 189.

Southern and Western States. In my specimens, the antennæ are three-fourths as long as the body, and very slightly serrate: the posterior angles are not flattened, as in the preceding species; the anterior part of the marginal line is very short; the posterior extends in front of the middle, and is deflexed, as usual. The pectoral groove is moderately well-defined, and the claws are not toothed. Guérin (Ann. Ent. Soc. Fr., 2d Ser., 1, 187) refers this species to *Eucnemis*, but Say expressly states (Trans. Am. Phil. Soc., 6, 189) the pectus is canaliculate "each side of the middle." Say seems at first to have considered other species as varieties of this, as in the Journal of the Academy he mentions individuals having the elytra striate, and others with the third joint of the antennæ less elongated. As Say does not mention the flat and incurved posterior angles of the thorax, it will be more prudent to consider this as his species, although somewhat smaller than that required by his description.

B. *Tarsi articulo 4^{to} nec latiore nec lobato.*

4. *M. humeralis*, opacus, ater, parce fusco-pubescent, thorace latitudine brevior, lateribus parallelis apice summa rotundatis, angulis posticis subcarinatis, linea marginali dislocata, confertim scabro-punctato, medio utrinque subfoveato, elytris fere parallelis apice obtusis confluentem scabro-punctatis, obsolete striatis, basi late rufescentibus, pedibus antennisque rufis, his articulo 3^{io} non angustiore. Long. .15.

Lec. Proc. Acad. Nat. Sc. 6, 48.

Eucnemis humeralis Say, Trans. Am. Phil. Soc. 6, 189; Harris, Trans. Hartford Soc. Nat. Hist. 72.

Pennsylvania, Dr. Melsheimer; Tennessee, Dr. Schaum. Differs from all the preceding species by the third joint of the antennæ being as wide as the fourth. The antennæ in both specimens are half as long as the body, compressed, but not strongly serrate: the two discoidal foveæ of the thorax are broad, but not deep; there is also a trace of a dorsal impressed line: the marginal line is dislocated, as usual; the anterior portion is very short, and the posterior portion extends nearly to the apex. The claws of the tarsi appear to be indistinctly toothed at the middle.

This species seems subject to variation in colour: the anterior margin of the thorax and the posterior angles are usually tinged with rufous. A specimen sent by Dr. Schaum has the elytra entirely black, but otherwise seems not to be sufficiently distinct.

Div. 3. CEROPHYTIDES.

Although differing greatly from each other, there is such a close accordance in some characters between Cerophytum and Perothops that I have been induced to place them together. The latter genus has been very fully examined by Erichson, and the detail of his observations is given in the third volume of Germar's Zeitschrift. He has placed it among the genuine Elateridæ, considering it as forming a transition to the Cebrionidæ by its more prominent mandibles and cleft ligula. The approximation of the antennæ, however, brings it nearer to the Eucnemides; and it will be found, on comparison, that those points in which it differs from the Eucnemides are precisely those in which it differs from the true Elaterides, and approaches the Cebrionides. I therefore prefer regarding it as an osculant between the latter family and the Eucnemides, and, on account of its general form, and the structure of the head, to be placed next the last mentioned division.

The differences between Cerophytum and Perothops are as follow:

The front of Cerophytum is gibbous, while in Perothops it is only deflexed anteriorly. The mandibles are larger and more prominent in Perothops: the prosternum is furnished with a short rounded lobe in Cerophytum, while in Perothops it is nearly truncate anteriorly: the lateral suture is curved convexly outwards in Cerophytum, and is straight in Perothops: the laminæ of the posterior coxæ are somewhat suddenly dilated internally in Perothops, and are entirely obsolete in Cerophytum: the posterior trochanters are very long in Cerophytum, and moderate in Perothops: the tarsi are lobed and spongy in Cerophytum, with the first joint longer and the fourth joint bilobed: in Perothops the joints are short, diminish very gradually in length, the first being much thicker, and are very densely pubescent.

The strong points of resemblance are as follows:

The antennæ are closely approximated, inserted in a deep sinus; the labrum is indistinct, being connate with the clypeus, which is dilated in front of the antennæ: the first joint of the antennæ is elongate; the anterior coxæ are more widely separated than in the true Elateridæ, and the posterior spine is short; the last joint of the palpi is very large and triangular; the tarsi are short, and the claws pectinate.

CEROPHYTUM *Latr.*

1. *C. pulsator*, ater, opacus, capite thoraceque fusco-pubescentibus, hoc convexo, latitudine fere sesqui brevior, lateribus antice valde rotundatis, confertim punctato, angulis posticis minutis prominulis, elytris striis punctatis, interstitiis planis scabro-punctatis. Long. .27—.33.

Haldeman, Proc. Acad. Nat. Sc. 3, 348; LeConte, ibid. 6, 230.

Chorea pulsator Haldeman, Proc. Acad. Nat. Sc. 3, 150.

Pennsylvania; Ohio. The female was given me by Mr. Haldeman, the male by Dr. Schaum. The latter is more slender than the female; the third to the tenth joints of the antennæ are furnished with a stout branch near the base, externally; the last joint is longer, and is thickened somewhat towards the tip, as if composed of two joints agglutinated together.

PEROTHOPS *Esch. Erichson.*

1. *P. mucidus*, piceo-niger, tenuiter cinereo-pubescentibus, thorace convexo, latitudine brevior antrosum valde angustato, lateribus rotundato; angulis posticis brevibus subdivergentibus, subtilissime punctulato, punctis paucis minutis consperso, elytris tenuiter striatis, interstitiis paulo convexis, alutaceis, parce subtiliter punctatis, ore barbato. Long. .55—.6.

Erichson, Germ. Zeitschr. 3, 117.

Elater mucidus Schönh., Syn. Ins. Supp. 133; (*muscidus*) Say, Ann. Lyc. 1, 256.

Eucnemis muscidus Say, Trans. Am. Phil. Soc. 6, 186.

Elater unicolor Say, Ann. Lyc. 1, 256.

Eucnemis unicolor Say, Trans. Am. Phil. Soc. 6, 186.

Middle and Southern States. *E. muscidus* Say is a brown, not fully coloured variety.

Div. 4. ELATERIDES, (*genuini.*)

The genera of this division are very numerous, and seem to have been very unnecessarily multiplied on slight grounds. They are all characterized by having the mandibles small and retracted, and the antennæ widely separated, inserted very near the eyes in deep foveæ: the clypeus is never dilated anteriorly, and the labrum is always distinct. The following table expresses the relations of the genera found in this country, in a tolerably natural manner, though the necessity of introducing several new genera, mostly for single anomalous species, is very much to be regretted.

1. *Tarsi subæqualiter pubescentes, sæpe lobati; mesosternum non protuberans; prosternum semper mucronatum; antennæ non receptæ.*

A. Prosternum semper mucronatum, lateribus rectis: frons præcipue concava, vel plana, fossulis antennarum male definitis: coxæ posticæ laminis angustis, intus paulo dilatatis, vix dentatis: antennæ articulo 1^{mo} mediocri; ungues simplices.

A. Prosternum antice truncatum, non lobatum:

Frons producta, marginata, reflexa	-	-	-	-	-	Campylus.
Frons depressa, antice non marginata	-	-	-	-	-	Oestodes.

B. Prosternum antice lobatum, rotundatum:

Frons antice marginata; tarsi articulo 1 ^{mo} elongato;						
Tarsi articulis 2 et 3 lobatis, 4 ^{to} parvo recepto	-	-	-	-	-	Pedetes.
Tarsi articulis non lobatis, 4 ^{to} non recepto	-	-	-	-	-	Athous.
Tarsi articulis 2—4 breviter lobatis, 4 ^{to} non recepto	-	-	-	-	-	Pityobius.
Frons antice marginata; tarsi articulo 1 ^{mo} non vel vix longiore;						
Antennæ articulo ultimo non maiore	-	-	-	-	-	Limonius.
Antennæ articulo ultimo maiore	-	-	-	-	-	Gambrinus.
Frons antice non marginata;						
Tarsi filiformes, articulo 1 ^{mo} paulo longiore	-	-	-	-	-	Corymbetes.
Tarsi articulis 2 et 3 lobatis, 4 ^{to} recepto, 1 ^{mo} elongato	-	-	-	-	-	Asaphes.

B. Prosternum lobatum et mucronatum, sutura concava, antice non exarata: frons præcipue convexa, apice non marginata, fossulis antennarum distantibus bene definitis; coxæ posticæ laminis variis, antennæ serratæ, articulo 1^{mo} mediocri.

Coxæ posticæ laminis postice non truncatis:

Tarsi articulo 1 ^{mo} longiore	-	-	-	-	-	Crigmus.
Tarsi articulo 1 ^{mo} vix longiore	-	-	-	-	-	Atractopterus.

Coxæ posticæ laminis postice truncato-emarginatis - - - Ludius.

C. Prosternum, lobatum, et mucronatum, sutura laterali concava, antice exarata: frons valde convexa, apice non marginata: coxæ posticæ non valde dilatatae, intus minus dentatæ: antennæ vix serratæ, articulo 1^{mo} elongato:

Ungues simplices, palpi dilatati	-	-	-	-	-	Dolopius.
Ungues serratæ, palpi acuminati	-	-	-	-	-	Adrastus.

D. Prosternum lobatum et mucronatum, sutura laterali concava, præcipue antice exarata: frons plus minusve convexa, antice marginata: coxæ posticæ dente interno magno, acuto: antennæ articulo 1^{mo} mediocri.

Ungues simplices: coxæ laminis maxime dilatatis;

Tarsi articulo 3 ^{io} longe lobato	-	-	-	-	-	Anchastus.
Tarsi articulo 3 ^{io} breviter lobato	-	-	-	-	-	Brachycrepis.

Ungues simplices: coxæ laminis subsubito modice dilatatis;

Tarsi articulis 2 et 3 subtus longe lobatis	-	-	-	-	-	Dicrepidius.
Tarsi non lobati, filiformes	-	-	-	-	-	Elater.
Ungues simplices; coxæ laminis sinuatim sensim dilatatis	-	-	-	-	-	Blauta.
Ungues simplices; coxæ laminis regulariter sensim dilatatis	-	-	-	-	-	Cratonychus.

E. Prosternum lobatum et mucronatum, sutura laterali subconcava, antice exarata: frons antice marginata, rotundata: coxæ posticæ laminis intus subito dilatatis, dente rotundato: antennæ articulo 1^{mo} elongato: ungues simplices:

Tarsi articulo 4 ^{to} lobato, vel simplici	-	-	-	-	-	Monocrepidius.
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F. Prosternum lobatum et mucronatum, sutura fere recta, non exarata: frons antice marginata; antennæ flabellatæ, articulo 1^{mo} longissimo: coxæ posticæ angustæ, dente interno rotundato.

Hemirhipus.

G. Prosternum lobatum et mucronatum, medio latiore, (sutura inde extrorsum convexa:) frons an-

tice marginata rotundata, parum convexa: antennæ articulo 1^{mo} mediocri: coxæ posticæ dente interno vix prominulo: tarsi non lobati:

Ungues simplices: tarsi mediocres setosi	-	-	-	Cryptohypnus.
Ungues medio unidentati: tarsi elongati pubescentes	-	-	-	Oedostethus.

2. *Tarsi non lobati, subtus densius pubescentes, vel sæpius inflati et penicellati; antennæ sæpe receptæ; mesosternum sæpe protuberans; prosternum semper mucronatum et lobatum: (frons modice vel vix marginata;) (laminæ coxarum angustæ, non vel vix subito dilatatæ.)*

H. Antennæ receptæ; thorax vesiculis nullis:

Antennæ articulo ultimo, non constricto	-	-	-	Adelocera.
Antennæ articulo ultimo constricto	-	-	-	Agrypnus.

I. Antennæ non receptæ; thorax vesiculis luminiferis:

Antennæ fere 12-articulatæ	-	-	-	Pyrophorus.
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K. Antennæ non receptæ; mesosternum protuberans; thorax vesiculis nullis:

Frons sensim declivis; tarsi mediocres;

Coxæ posticæ laminis postice sinuatis	-	-	-	Aphanobius.
Coxæ posticæ laminis non sinuatis	-	-	-	Melanactes.

Frons subito declivis; tarsi crassiusculi;

Mesosternum distinctum	-	-	-	-	Alaus.
Mesosternum connatum	-	-	-	-	Chalcolepidius.

3. *Tarsi pubescentes, sæpe subtus lobati, nec inflati, nec penicellati; antennæ non receptæ; mesosternum protuberans; prosternum antice lobatum, mucrone postico brevi truncato; (frons marginata, ungues varii.)* - - - - - Cardiophorus.

CAMPYLUS Fischer.

A. *Tarsi articulis 2—4 subtus ad apicem spongiosi.*

1. C. productus, æneo-piceus, fusco-pubescens, thorace planiusculo confertim punctato, latitudine longiore lateribus rectis parallelis, fortius marginatis, margine angulisque posticis rufescentibus, elytris seriatim punctatis, substriatis, interstitiis punctatis et subrugosis. Long. .58.

Elater (Campylus) productus Randall, Bost. Journ. Nat. Hist. 2, 8.

Lake Superior, two specimens; Maine, Randall.

B. *Tarsi subtus æqualiter pubescentes, non spongiosi.*

2. C. denticornis, ater, parce flavo-pubescens, capite thoraceque grosse confluentem punctatis, fronte thoracisque margine omni pallido, hoc canaliculato, paulo inæquali, antice subangustato, latitudine non longiore, elytris æneo-piceis, substriatis, confertim rugose punctatis, margine vittaque tenui sæpe obsoleta, pallidis. Long. .43.

Kirby, Fauna Bor. Am. 145; Germar, Linnæa Entom. 1, 150.

Campylus flavinasus Melsheimer, Proc. Acad. Nat. Sc. 2, 219.

Lake Superior, Maine, and Pennsylvania. In the male the sides of the thorax are slightly sinuous, and the antennæ are longer than in the female.

OESTODES *Lec.*

Frons planiuscula, lateribus oblique marginatis, antice non marginata; labrum antice rotundatum; mandibulæ acutæ, edentatæ; antennæ elongatæ, serratæ 11-articulatæ, articulo 1^{mo} breviusculo, 2^{ndo} parvo, 3—5 latis triangularibus, sequentibus sensim angustioribus, 11^{mo} paulo longiore non constricto; palpi articulo ultimo ovali, truncato; prosternum antice truncatum non lobatum, mucrone postico elongato, acuto, lateribus rectis non excavatis; mesosternum non profuberans; coxæ posticæ laminis angustis intus vix latioribus, non dentatis; tarsi tenues pubescentes, articulis 1—4 sensim brevioribus, 5^o elongato, unguiculis validis simplicibus.

A curious genus related to *Campylus* by the absence of the prosternal lobe, and to *Corymbites* by its tarsi, the first joint of which is not conspicuously longer than the second; the front is entirely that of *Corymbetes*; the body is long, slender, and subcylindrical.

1. *O. tenuicollis*, niger, nitidus, glaber, capite parce punctato, thorace vix punctulato, elytris striato punctatis, interstitiis parce subtiliter rugose punctatis, tibiis tarsisque testaceis, antennis nigris. Long. .27.

Elater tenuicollis Randall, Bost. Journ. Nat. Hist. 2, 14.

Vermont, Prof. Adams; Maine and Massachusetts, according to Randall. The elytra vary in colour from black to yellow; the intermediate variety has the disc yellow, with the base, margin and suture black. In one specimen the posterior angles of the thorax are yellowish.

In the species of this genus the thorax is convex, longer than wide, parallel on the sides, and slightly constricted near the posterior angles, which are long, acute, divergent, and finely carinated; the base is not fissured, but is marked each side with a tolerably long acutely elevated line; the body is glabrous above, but a few short hairs may be perceived towards the tip and margin of the elytra; the thorax in the male is more constricted posteriorly than in the female, whereby its outline appears less straight.

2. *O. graciliformis*, niger, nitidus, glaber, capite punctato, thorace subtilius parce punctato, apice angulisque posticis testaceis, elytris striato-punctatis, interstitiis subrugosis, pedibus flavis, antennis fusco-testaceis. Long. .28.

Elater graciliformis Randall, Bost. Journ. Nat. Hist. 2, 13.

One specimen, Vermont, Prof. Adams. In form precisely similar to the preceding.

PEDETES *Kirby.*

There are a number of North American *Elaters* having the second and third joints of the tarsi lobed beneath; the first joint considerably elongated; the coxal plates narrow, and the front produced and margined. And although Germar (*Zeitschr.* 2, 244) complains that he has not been able to detect the lobed tarsi in the species mentioned by Kirby as the type of his genus, this confusion is not to be wondered at, when we remember the very different names applied to the most common European species by the entomologists of different nations.

Our genus seems to be equivalent to *Athous*, as defined by Latreille, (*Ann. Ent. Soc. France*, 1st ser., vol. 3,) but by no means what was intended by Eschscholtz, who placed his *Athous* in a group in which the tarsi are not lobed. The species may be naturally grouped as follows:

A. *Thorax angulis posticis non carinatis, apice rotundatis.** *Antennæ articulis 2 et 3 æqualibus 4^{to} minoribus.*

1. *P. trivittatus*, fusco-testaceus, cinereo-pubescent, thorace convexo, elongato, lateribus rectis, confertim subtilius punctato, elytris rufo-piceis, sutura margineque infuscatis, striis punctatis, interstitiis planis, sat dense punctatis, fronte non impressa. Long. .4.

Athous trivittatus Melsheimer, Proc. Acad. Nat. Sc. 2, 157.

One specimen in Dr. Melsheimer's collection. This species differs from all the others in having the front not impressed and hardly produced. The antennæ and feet are pale testaceous.

** *Antennæ vix serratæ, articulo 3^{io} 4^{to} æquali, vel vix minore.*

2. *P. Brightwelli*, fuscus, vel testaceus pubescens, thorace elongato, plus minusve canaliculato, convexiusculo, confertim punctato, elytris striis valde punctatis, interstitiis minus convexis, punctatis et parce rugosis, versus basin impressis et testaceis. Long. .42—.47.

Kirby, Fauna Bor. Am. 146.

Athous oblongicollis Mels. Proc. Acad. Nat. Sc. 2, 155.

Athous arcticollis Mels. Proc. Acad. Nat. Sc. 2, 156.

Middle and Southern States, not rare. The specimen described by Kirby seems to have been a pale coloured variety of this species, which varies much in colour. In the male the thorax is constricted before the posterior angles, which are slightly divergent; in the female, the sides are straight and the angles do not diverge; the dorsal channel is never deep, and is frequently wanting.

3. *P. acanthus*, æneo-piceus, pubescens, thorace elongato, convexo, subtilius punctato, angulis rufescentibus, elytris striis valde punctatis, interstitiis minus convexis punctatis, versus basin impressis, epipleuris pedibus antennarumque basi testaceis. Long. .27—.35.

Elater acanthus Say, Trans. Am. Phil. Soc. 6, 178.

New Jersey, Mr. Guex; a typical specimen in Dr. Harris' collection. Differs from the preceding by its smaller size, and more convex and more finely punctured thorax. Otherwise there appears to be no satisfactory difference; the front is sometimes testaceous; probably pale-coloured varieties will occur.

B. *Thorax angulis posticis subtiliter carinatis, apice rotundatis.** *Antennæ articulo 3^{io} 4^{to} æquali.*

4. *P. scapularis*, ater opacus, subtiliter fusco-pubescent, thorace elongato, antrorsum subangustato, confertissime punctato, angulis posticis testaceis, carina angulari margini approximata, indistincta, elytris macula basali lutea, striis punctatis, interstitiis scabro-punctatis. Long. .4.

Elater scapularis Say, Trans. Am. Phil. Soc. 6, 178.

The typical specimen from New Hampshire kindly loaned me by Dr. Harris. The feet and antennæ are entirely black. The lobes of the tarsi are smaller than in the other species, and with some species contained in *Athous*, would seem to indicate that the two genera should be united. The antennæ, as in the next species, are elongated.

5. *P. cucullatus*, testaceus, vel picco-testaceus, fulvo-pubescent, thorace elongato, antrorsum

subangustato, dense punctato, carina angulari obliqua, elytris striis punctatis, interstitiis vix convexis, parce punctatis, antennis pedibusque flavis. Long. .4—5.

Elater cucullatus Say, Ann. Lyc. 1, 264; Trans. Am. Phil. Soc. 6, 177.

Athous hypoleucus Melsheimer, Proc. Acad. Nat. Sc. 2, 155.

Athous procericollis Melsheimer, Proc. Acad. Nat. Sc. 2, 156.

Athous strigatus Melsheimer, Proc. Acad. Nat. Sc. 2, 154.

Pennsylvania, Maryland, and Ohio. The sides of the thorax in the female are broadly rounded in front, while in the male, they are entirely straight.

Say's original description does not appear to be sufficient entirely to identify the species, but his subsequent remarks refer to a species having carinated thoracic angles; the type in Dr. Harris' collection is a male of this species. The antennæ in both sexes are longer than the thorax.

Melsheimer's *Athous strigatus* is merely a very large female (.69 unc.) of this species, showing no specific difference.

6. *P. fossularis*, nigro-piceus, tenuiter cinereo-pubescens, thorace latitudine longiore, lateribus parallelis antice rotundatis, confertim grossius punctato, pone medium utrinque profunde transversim foveato, angulis posticis subrectis, carina angulari margini approximata fere indistincta, elytris striis profunde impressis, punctulatis, interstitiis subconvexis vage scabro-punctulatis. Long. .45.

One specimen, New Jersey, Mr. Guex. Easily distinguished by the rounded sides and the coarser punctuation of the thorax, as well as by the two deep impressions half way between the middle and the base. The specimen is apparently a female, as the antennæ do not extend beyond the base of the thorax. The form is more robust than the preceding or next species.

7. *P. equestris*, ater, subtiliter cinereo-pubescens, opacus, capite thoraceque dense punctatis, rubris, hoc latitudine vix longiore, lateribus rectis, antice rotundatis, angulis posticis nigris, subrectis, carina angulari margini approximata, basi medio nigricante, elytris striis punctatis, interstitiis scabris. Long. .57.

One specimen, Georgia. The lobes of the tarsi are very narrow and short; the upper surface of the head is red, but the mouth and organs are entirely black. The antennæ are not longer than the thorax, and strongly serrate.

** *Antennæ articulis 2 et 3 parvis æqualibus.*

8. *P. posticus*, piceus, fusco-pubescens, thorace elongato, minus convexo, antice vix angustato, lateribus rectis fortius marginatis, diaphanis, apice breviter rotundatis, disco dense punctato, postice canaliculato, basi tota testacea angulis posticis inflexis rotundatis, carina obliqua valde distincta, elytris striis punctulatis, interstitiis planis confertim rugose punctatis, antennis basi pedibusque testaceis. Long. .48.

Limoniæ posticus Melsheimer, Proc. Acad. Nat. Sc. 2, 158.

Pennsylvania. I have seen only the typical specimen in Dr. Melsheimer's collection. The antennæ are a little longer than the thorax, tolerably strongly serrate, fuscous black, with the first joint testaceous. Has very much the form and general appearance of *Campylus productus*; the lobes of the tarsi are very short.

ATHOUS Esch.

The species which I include in this genus only differ from those of the preceding genus in not having the second and third joints of the tarsi obviously lobed; the fourth joint, therefore, though only half the size of the preceding, is not received upon it: the first joint is as long as the two following united.

This genus will eventually be merged with the preceding, in which case the two species here described, forming the first group, having the posterior angles of the thorax not carinated, and the third joint of the antennæ equal to the fourth, will enter the division (A**), before *Pedetes Brightwelli*; those of the second group will enter (B**.)

A. Thorax angulis posticis non carinatis.

1. *A. reflexus*, piceus, vel obscure testaceus, parallelus, tenuiter cinereo-pubescent, fronte profunde excavata, thorace oblongo, marginato, lateribus fere rectis, angulis posticis subrectis, paulo convexo, sat dense, lateribus confluent punctato, elytris striis punctatis, interstitiis subconvexis, parce punctatis, subtus rufo-piceus. Long. .65—.7.

Middle States, rare. Body elongate; beneath, rufo-piceous; above, piceous, rarely testaceous; the suture and margin of the elytra darker. Head coarsely punctured, with the front very much produced, deeply excavated: antennæ a little longer than the thorax, subserrate; second joint small, third equal to the fourth: thorax longer than wide, anteriorly not narrowed, sides very slightly rounded, almost straight, distinctly margined, margin reflexed posteriorly, so that the posterior angles become elevated, as in *Pedetes Brightwelli*; angles almost rectangular, with a very indefinite trace of a carina; disc slightly convex, coarsely punctured, punctures denser and confluent at the sides: elytra parallel, obtusely rounded posteriorly; striæ punctured, interstices slightly convex, with a few distinct punctures.

2. *A. vittiger*, niger, tenuiter pubescens, parallelus elongatus, fronte excavata testacea, thorace minus convexo elongato, lateribus vix rotundatis, dense punctato, lateribus testaceo, elytris striis punctatis, interstitiis subconvexis rugose punctulatis, vitta integerrima margineque laterali flavis, antennarum basi pedibusque flavo-testaceis. Long. .3.

A mutilated specimen from Oregon. The tarsi, so far as can be distinguished, belong to the present genus, and the characters are those of the preceding species: the sides of the thorax are less reflexed posteriorly, and the antennæ are somewhat less serrate.

Allied to this species appears to be *Elater rufifrons* Randall (Bost. Jour. Nat. Hist. 2, 6) from Maine. It is similarly coloured, but is much larger (.6 unc.) It was found in Maine.

B. Thorax angulis posticis acute carinatis.

3. *A. discalceatus*, fulvo-castaneus, helvo-pubescent, infra læte rufo-testaceus, thorace latitudine fere, sesqui longiore, (antrorsum angustato, lateribus postice rectis, antice late rotundatis,) angulis posticis subdivergentibus, punctato, elytris tenuiter striato-punctatis, interstitiis vage punctatis. Long. .5.

Elater discalceatus Say, Trans. Am. Phil. Soc. 6, 169.

The typical specimen found in New Hampshire: in Dr. Harris' collection: it is evidently a female, and the antennæ are as long as the head and thorax.

A specimen from Pennsylvania, which I consider as the male of this species, has the sides of the thorax perfectly straight, the posterior angles scarcely diverging, and the antennæ longer than the head and thorax. It is much smaller than the female, (.38 unc.,) and darker coloured. In this and the next species the second and third joints of the antennæ are equal, and, together, not longer than the fourth.

4. *A. bicolor*, supra ater, pube erecta nigro-grisea vestitus, thorace latitudine fere sesqui longiore, (antrorsum angustato, lateribus paulo rotundatis,) confertim punctato, angulis posticis piceis subdivaricatis, elytris striis tenuibus punctulatis, interstitiis confertim rugose punctulatis, subtus castaneus, antennis pedibusque testaceis. Long. .35.

One specimen found at New York. It is a female, having the antennæ as long as the head and thorax.

PITYOBIUS *Lec.*

Frons producta, profunde excavata; mandibulæ apice emarginatæ; antennæ elongatæ 11-articulatæ, maris bipectinatæ, feminae subserratæ, articulis 2 et 3 minoribus, illo minore, 11^{mo} simplici; prosternum antice lobatum, postice mucronatum, lateribus rectis, antice subexcavatis; mesosternum non protuberans: coxæ posticæ laminis angustis intus sensim paulo latioribus, non dentatis: tarsi articulo 1^{mo} elongato, sequentibus duobus æquali, apice subtus spongioso, 2—4 sensim brevioribus subtus breviter lobatis, 5^{to} longiore tenui, unguiculis simplicibus.

The body is long and parallel, not convex; the thorax without basal fissures, with the posterior angles acute, produced and diverging, and marked with an indistinct carina parallel to the margin.

1. *P. anguinus*, piceo-niger, tenuiter pubescens, thorace confluent punctato, profunde canaliculato, antice utrinque profunde foveato, angulis posticis elongatis, divaricatis obsolete carinatis, elytris striis profundis, valde punctatis, interstitiis convexis subtilius punctatis. Long. .8—1.0.

This fine species is found in pine forests, but is rare: my specimens came from the Southern States, but Dr. Harris has found it in New Hampshire. The late Mr. Melly sent me, under the name *Calocerus niger*, (Westwood,) two males, found in turpentine. I have substituted for the specific name that under which it appears in Dejean's catalogue, and have been compelled to change the generic name, as being applicable to but one sex.

LIMONIUS *Esch.*

This genus differs from *Athous* in having the first and second joints of the tarsi equal or hardly different in length; the fourth is not suddenly smaller than the third, and none of the joints are lobed or spongy beneath. Our species are difficult to distinguish, as they approach very closely in external characters; they may be grouped as follows:

A. Prosternum sutura laterali antice excavata:

- | | | | | | | |
|---|---|---|---|---|---|------------|
| α. Clypeus valde emarginatus | - | - | - | - | - | Sp. 1—2. |
| Clypeus late vel vix emarginatus; | | | | | | |
| β. Antennæ articulis 2 et 3 parvis, pedibus nigris | - | - | - | - | - | Sp. 3—4. |
| γ. Antennæ articulis 2 et 3 coniunctis 4 ^{to} maioribus, pedibus rufis | - | - | - | - | - | Sp. 5—11. |
| δ. Antennæ articulis 2 et 3 parvis, pedibus flavis | - | - | - | - | - | Sp. 12—13. |
| B. Prosternum sutura laterali vix excavata | - | - | - | - | - | Sp. 14—25. |

A.—a.

1. *L. auripilis*, plumbeo-niger, griseo-pubescent, clypeo emarginato, aureo piloso, thorace polito, latitudine sublongiore, convexo, minus dense grossius punctato, dense aureo-piloso, basi canaliculato, elytris striis punctatis, interstitiis planis, confluentur punctatis, margine basali rufo, epipleuris pedibusque rufis, antennis nigris, articulo primo præcipue rufo. Long. .35.

Elater auripilis Say, Journ. Acad. Nat. Sc. 3, 172; Trans. Am. Phil. Soc. 6, 178.

Southern and Western States. A specimen from Alabama, given me by Mr. Halde-
man, has the antennæ entirely black: in a specimen from Illinois, the dense hair covering
the head and thorax is less yellow than in the others, so that the insect has a dull leaden
appearance. The distinction between this and the next species rests on the polished sur-
face of the thorax, and in its less dense punctuation, characters which, though obscured
by the dense pubescence, may be readily seen. The lobes of the clypeus in both species
are subacute.

2. *L. pubicollis*, niger, opacus, griseo-pubescent, clypeo emarginato, aureo-piloso, thorace la-
titudine sublongiore, convexo, dense fere confluentur punctato, aureo-piloso, basi canaliculato, elytris
striis punctatis, interstitiis planis fere confluentur punctatis, margine basali rufo, epipleuris pedibus-
que rufis. Long. .37—46.

Georgia, not rare. In all the specimens examined, the antennæ are entirely black: the
antennæ of the male are a little longer than those of the female, and more strongly ser-
rate; in both this and the preceding species, the third joint, though not dilated, is scarcely
shorter than the fourth.

A.—3.

3. *L. mirus*, ater, supra opacus, tenuiter griseo-pubescent, clypeo concavo, vix sinuato, thorace
latitudine longiore antrorsum subangustato, lateribus fere rectis, confertim punctato, elytris striis
punctatis vix impressis, interstitiis confertim punctatis, auruntiacis, macula postica communi magna
ad apicem extendente nigra. Long. .37.

One specimen, San Diego, California. Body black, above without lustre, thinly covered
with short gray hairs: antennæ longer than the head and thorax; serrate: second and
third joints, together, not longer than the fourth: head densely punctured; front mode-
rately produced, slightly concave, anterior margin hardly sinuate: thorax longer than wide,
slightly and regularly narrowed in front, scarcely rounded on the sides; disc somewhat
convex, very densely punctured; posterior angles not divergent, moderately produced,
rounded at tip, carina, as in the other species of the group, short and parallel with the
margin: elytra not wider than the thorax, very slightly narrowed from the base, obtusely
rounded at the apex; striæ scarcely impressed, strongly punctured, interstices finely and
densely punctured; base deeply transversely impressed; colour bright orange, with the
posterior third covered with a large black spot, the anterior outline of which is oblique,
so that the orange colour extends along the sides almost to the apex. In this species and
in the next the last joint of the antennæ is subacuminate; in all the other species known
to me it is rounded at tip.

4. *L. aurifer*, ater, subtiliter cinereo-pubescent, clypeo concavo æneo, thorace latitudine longiore,
lateribus vix rotundato, aureo-purpureo nitido, parce punctato, postice canaliculato, elytris fere opa-
cis, striis punctatis vix impressis, interstitiis punctatis. Long. .24—32.

Vermont, Prof. Adams; Illinois, Mr. Willcox. This very pretty little species is easily distinguished by its brilliant metallic purple thorax: the antennæ are longer than the head and thorax, and serrate; the second and third joints are equal, and together equal in length to the fourth: the anterior margin of the clypeus is reflexed, and almost straight. In the larger specimen the punctures of the striæ of the elytra are hardly larger than those of the interstitial spaces: in both the base is transversely impressed.

A.—γ.

5. *L. interstitialis*, æneo-niger, griseo-pubescens, clypeo late emarginato, thorace latitudine longiore dense punctato, angulis posticis carinatis paulo productis, elytris striis acutis, punctulatis, interstitiis planis confertim punctatis, antennis pedibusque rufis. Long. .6.

Corymbetis interstitialis Melsheimer, Proc. Acad. Nat. Sc. 2, 215.

One specimen from Pennsylvania, in Dr. Melsheimer's collection. This only differs from *L. cylindriformis* by its larger size, and more finely punctured elytral striæ: I have doubts of its being really distinct.

6. *L. cylindriformis*, fusco-niger, dense fusco vel griseo-pubescens, clypeo late emarginato, thorace latitudine longiore, dense punctato, angulis posticis carinatis, paulo productis, elytris striis acutis parcius punctatis, interstitiis planis confertim punctulatis, basi margineque sæpe rufescentibus, antennarum basi pedibusque rufis, illis sæpe rufescentibus. Long. .4—.45.

? *Elater cylindriformis* Herbst, Käfer, 10, 93; tab. 166, fig. 9.

Elater cylindriformis Say, Jour. Acad. Nat. Sc. 3, 176; Trans. Am. Phil. Soc. 6, 166.

Limoniis hirticollis Melsheimer, Proc. Acad. Nat. Sc. 2, 215.

Very abundant in the eastern part of the United States. Although the description given by Say, above cited, may not be sufficient fully to identify this species, his subsequent observations, and the notes under his description of *Elater appressifrons* (Ann. Lyc. 1, 267,) remove all doubt. Herbst's description seems rather to apply to this species, as the *Corymbetes*, to which it is referred by Germar, and which is *El. appressifrons* Say, has the antennæ nearly black, even at the base: the form of the clypeus is, unfortunately, not mentioned. This determination is confirmed by Dr. Melsheimer, by whom specimens were furnished to Say and Knoch: his *L. hirticollis* is, however, merely a large female of the same species: it is curious that he should have placed it under a genus different from the preceding closely allied species.

7. *L. confusus*, æneo-piceus, cinereo-pubescens, clypeo late rotundato, thorace latitudine longiore, antrorsum subangustato, lateribus vix rotundatis, punctato, postice canaliculato, angulis posticis brevibus, subcarinatis, non divaricatis, elytris striis punctatis, interstitiis planis sat punctatis, pedibus piceo-rufis, antennis totis nigris. Long. .37.

One specimen from Lake Superior, and another from New York. This species resembles very closely the next, but may be distinguished by the moderately produced clypeus being rounded anteriorly, not truncate: the antennæ are entirely black, a little longer than the head and thorax, serrate, with the second and third joints subequal, together a little longer than the fourth: the thorax is distinctly but slightly narrowed in front, and scarcely rounded on the sides: the epipleuræ are testaceous at the margin, and the thighs are darker than the tibiæ.

8. *L. plebeius*, æneo-piceus, minus subtiliter cinereo-pubescens, clypeo truncato, thorace latitudine longiore, antrorsum subangustato (minus in femina) lateribus late rotundatis, punctato, angulis posticis carinatis brevibus vix divaricatis, elytris striis punctatis interstitiis sat punctatis, antennarum basi pedibusque piceo-rufis. Long. .34—.37.

Elater plebeius Say, Ann. Lyc. 1, 263.

Limoniis metallescens Melsheimer, Proc. Acad. Nat. Sc. 2, 158.

Common in the Middle and Southern States. The base of the antennæ is sometimes dark coloured, but never black, as in the preceding species: the second and third joints are equal, and together are longer than the fourth: the clypeus is moderately produced, truncate anteriorly, and even very slightly sinuous. In the females the sides of the thorax are more rounded, and the antennæ are a little shorter than the thorax. The margin of the epipleuræ is always rufo-testaceous.

9. *L. ænescens*, fusco-æneus, griseo-pubescens, clypeo truncato, thorace latitudine paulo longiore, antrorsum subangustato, lateribus omnino rectis, angulis posticis carinatis brevibus divaricatis, densius punctato, postice subcanaliculato, elytris striis punctatis, interstitiis planis punctatis, pedibus rufis. Long. .35.

One specimen, New Jersey, Mr. Guex. Allied to the two preceding species, but sufficiently distinct by the perfectly straight sides of the thorax: the posterior angles are short, and continue the line of the sides; they therefore appear divergent: the antennæ are hardly piceous at base; the second and third joints together are longer than the fourth: the margin of the epipleuræ is testaceous.

10. *L. æger*, fusco-æneus, griseo-pubescens, clypeo truncato, thorace latitudine longiore antrorsum subangustato, lateribus late rotundatis confertim subtilius punctato, angulis posticis vix carinatis brevibus subacutis, elytris striis subtiliter punctatis, interstitiis plane discrete punctatis, antennarum basi pedibusque rufis. Long. .26.

One specimen, Lake Superior. In form and structure resembles very much *L. plebeius*, but is much smaller: the thorax is more finely and densely punctured: from the next it is distinguished by its larger size and more densely punctured thorax, as well as by its truncate clypeus: the thorax is scarcely channelled posteriorly.

11. *L. quercinus*, niger, cinereo-pubescens, clypeo late emarginato, thorace postice canaliculato, latitudine longiore, antrorsum subangustato, lateribus paulo rotundatis, minus dense punctato, angulis posticis vix carinatis subacutis, elytris striis punctatis, interstitiis discrete punctatis, antennarum articulis tribus pedibusque rufis. Long. .2—.27.

Dejean, Cat. 103.

Elater quercinus Say, Ann. Lyc. 1, 262.

A very common species in every portion of the United States. From the next it may be distinguished by the more acute posterior angles of the thorax, and by the second and third joints of the antennæ being longer than the fourth, as in the preceding species: the posterior angles of the thorax are sometimes piceous, but never yellow, as in the following species.

A.—δ.

12. *L. basillaris*, niger, tenuiter cinereo-pubescens, clypeo late emarginato, thorace postice canaliculato, latitudine longiore, lateribus fere rectis antice paulo rotundatis, minus dense punctato,

angulis posticis fere obtusis, flavis vix carinatis, elytris striis punctatis, interstitiis discrete punctatis, pedibus flavis, antennarum articulis 2 et 3 parvis, 1^{mo} vel nigro, vel piceo, vel flavo. Long. .17—.23.

Elater basillaris Say, Journ. Acad. Nat. Sc. 3, 172.

Abundant every where. I was at first inclined to consider Say's species as merely identical with the preceding, but as in the description he says that the first and second joints of the antennæ are pale rufous, it can refer to no other than the present species. The antennæ are more strongly serrate than usual, and the erect hairs along the margin are very distinct: the second and third joints are equal, and together are shorter than the fourth: the first joint is usually piceous; sometimes it is black: sometimes both the first and the second joints are yellow. The posterior angles of the thorax are very short, and almost obtuse; they are always distinctly yellow: the anterior angles of the inflexed portion of the thorax and the anterior lobe of the prosternum are rufous. The antennæ of the male are longer than the head and thorax; those of the female are shorter.

13. *L. semiæneus*, piceo-æneus, cinereo-pubescens, clypeo late emarginato, thorace latitudine longiore, postice canaliculato, lateribus fere rectis, subtilius sat dense punctato, angulis posticis fere obtusis vix carinatis flavis, elytris vel flavis, vel piceis basi margineque flavis, striis punctatis, interstitiis discrete punctatis, pedibus flavis, antennis nigris, articulis 2 et 3 æqualibus parvis. Long. .2.

Georgia, not common. Except that the sides of the thorax are scarcely rounded, and the punctures very slightly finer and more dense, I find no differences but those of colour between this and the preceding.

B.

14. *L. subauratus*, elongatus nigro-æneus (dense?) cinereo-pubescens, clypeo truncato, thorace latitudine sesqui longiore, antice vix angustato, lateribus fere rectis, angulis posticis carinatis subacutis, convexo, postice obsolete canaliculato, punctato, elytris nigro-piceis, striis punctatis, vix impressis, interstitiis punctulatis, pedibus antennisque nigris, his articulo 3^{io} 4^{to} subæquali. Long. .39.

One specimen from Oregon, Col. M'Call. The pubescence has been nearly destroyed by alcohol, but enough remains at the base of the thorax to show that it was ash-coloured, and tolerably dense. This species has also very much the appearance of a *Corymbetes*, but the anterior margin of the clypeus, though very slightly prominent, is perfectly well defined.

15. *L. pilosus*, æneo-piceus, nitidus, pilis longioribus fere erectis cinereis minus dense vestitus, clypeo truncato, margine subreflexo, thorace latitudine longiore, lateribus rectis antice paulo rotundatis, punctato, parcius in medio, angulis posticis carinatis subacutis, elytris tenuiter seriatim punctatis, interstitiis discrete punctatis, antennis pedibusque nigris, illis articulo 3^{io} 2^{ndo} paulo maiore. Long. .42.

One specimen from San Diego, California. This species is less elongated than the preceding, the thorax is less convex, and the anterior margin of the clypeus is quite prominent and slightly reflexed. The thorax is scarcely channelled posteriorly.

16. *L. hispidus*, minus elongatus æneo-niger, minus nitidus, griseo-pubescens, capite thoraceque pilis longioribus erectis subhispidis, clypeo truncato, margine distincto, thorace latitudine paulo longiore, lateribus rectis, punctato, postice canaliculato, angulis posticis carinatis vix acutis, elytris tenuiter striato-punctatis, interstitiis densius punctatis, antennis pedibusque nigris, illis articulis 2^{ndo} 3^{io} que subæqualibus, 4^{to} coniunctis longioribus. Long. .37—.43.

San Francisco, California, abundant. The antennæ of both sexes are moderately ser-

rate: in the male they are longer, in the female shorter, than the head and thorax: the form of body is more robust than in any of the preceding species: the posterior angles of the thorax are almost rectangular.

17. *L. dubitans*, minus elongatus æneo-piceus, fusco-pubescent, capite thoraceque pilis longioribus subhispidis, clypeo margine antico recto, indistincto, thorace valde convexo, punctato, lateribus rotundatis, angulis posticis parvis subacutis subcarinatis, elytris striis punctulatis, interstitiis vix convexis, dense punctatis, antennis articulis 2 et 3 subæqualibus, 4^{to} coniunctis longioribus. Long. .5.

New York and Pennsylvania, two females: still more robust and more cylindrical than the preceding, to which it appears to be most nearly allied. The great convexity of the thorax, which is hardly narrower in front than at the base, gives this species somewhat the aspect of *Cardiophorus*, while by the indistinctness of the anterior margin of the clypeus, it makes the transition to *Corymbites*.

18. *L. canus*, piceo-niger, valde elongatus, cinereo-pubescent, capite thoraceque densius pubescentibus, pilisque paucis suberectis vestitis, clypeo truncato, margine vix reflexo, thorace latitudine sesqui longiore, antrorsum angustato, et paulo rotundato, confertim punctato, canaliculato, angulis posticis obtusis subcarinatis apice rotundatis, elytris tenuiter striato-punctatis, interstitiis dense punctatis, pedibus fere piceis, antennis nigris, articulis 2 et 3 subæqualibus, 4^{to} coniunctis longioribus. Long. .39.

One specimen, San Diego, California. The antennæ are longer than the head and thorax, and strongly serrate: the hairs on the thorax are so disposed as to produce a faint longitudinal dark line from the basal depression on each side: the dorsal channel is distinct both at base and apex: the tibiæ and tarsi are paler than the femora. The general form is that of the male of *L. cylindriformis*.

19. *L. anceps*, elongatus, piceo-æneus, densius cinereo-pubescent, clypeo truncato, vix prominulo, thorace latitudine fere sesqui longiore, lateribus parum rotundatis, sat punctato, angulis posticis subacutis vix carinatis, elytris fuscis striis punctatis, interstitiis discrete punctatis, epipleuris pedibusque obscure rufis, antennis piceis articulo 3^{io} 4^{to} paulo brevioribus. Long. .3—35.

Western New York: specimens from Ohio are also in Dr. Harris' collection. The clypeus, although not prominent, is decidedly margined anteriorly: the absence of the small elevated line at the anterior portion of the inflexed margin of the thorax will distinguish it from *L. confusus* and *L. plebeius*, to which it bears a slight resemblance: the form is more slender, being about the same as *L. aurifer*: the hair on the elytra is so dense as to render the punctures indistinct: the third joint of the antennæ, though not as wide as the fourth, is perceptibly dilated.

20. *L. ectypus*, elongatus, piceo-æneus, densius cinereo-pubescent, clypeo truncato, vix prominulo, thorace latitudine longiore, lateribus late rotundatis, angulis posticis parum productis subacutis, obsolete carinatis, sat dense punctato, postice canaliculato, elytris fusco-testaceis, striis punctatis, interstitiis punctatis, pedibus antennisque testaceis, his articulis 2 et 3 coniunctis 4^{to} vix longioribus. Long. .35.

Elater ectypus Say, Trans. Am. Phil. Soc. 6, 167.

A typical specimen from Maine, in Dr. Harris' collection. Very much resembles the preceding, but the proportion between the basal joints of the antennæ will at once distinguish it.

21. *L. agonus*, elongatus, piceo-æneus, densius cinereo-pubescent, clypeo truncato, vix prominulo, thorace latitudine longiore, lateribus late rotundatis, densius punctato, postice canaliculato, angulis posticis vix obsolete carinatis brevibus fere obtusis, elytris fusco-testaceis, striis punctatis, interstitiis punctatis, antennis pedibusque rufo-testaceis, illis articulis 2 et 3 coniunctis 4^{to} vix longioribus. Long. .38.

Elater agonus Say, Trans. Am. Phil. Soc. 6, 171.

A typical specimen in Dr. Harris' collection: locality not marked. This species is very similar to *L. ectypus*, but the posterior angles of the thorax are not at all produced, and their apex is not acute: the ordinary carina is very small, and hardly visible.

22. *L. definitus*, cylindricus piceus, tenuiter pubescens, thorace confertissime punctato, angulis posticis rectis non carinatis subtestaceis, elytris striis profundis punctatis, interstitiis vage punctatis, antennis basi pallidioribus. Long. .19—.23.

Ziegler, Proc. Acad. Nat. Sc. 2, 268.

Middle and Southern States, rare. In one specimen the elytra are brownish.

23. *L. infernus*, cylindricus, piceus, tenuiter pubescens, thorace dense grossius punctato, margine omni testaceo, angulis posticis rectis, non carinatis, elytris striis profundis punctatis, interstitiis parce punctatis, pectoribus, pedibus antennisque basi testaceis, abdomine nigricante. Long. .15—.17.

Pennsylvania and New York, not rare. The under surface of the thorax is usually testaceous; sometimes it is fuscous, with the sutures paler. The pale margin of the thorax is dilated at each angle, so as to appear like four small yellow spots: the disc of the thorax is slightly channelled posteriorly.

24. *L. vagus*, piceus, subæneus, tenuiter cinereo-pubescent, clypeo medio non marginato, thorace latitudine brevior antrorsum modice angustato, lateribus antice paulo rotundatis, angulis posticis subcarinatis, acutis, divaricatis, subtilius punctato, linea dorsali pone medium lævi, elytris confertim punctatis stria suturali sola vix conspicua, basi margineque plus minusve testaceis, apice obtuse rotundatis, pedibus testaceis femoribus infuscatis, antennis nigris articulis 2 et 3 æqualibus 4^{to} coniunctis longioribus. Long. .29—.35.

Lake Superior, on the northern shore. This species and the next differ considerably from all the others in appearance, as well as by the absence of the elytral striæ. Nevertheless, on close comparison, nothing of a generic value can be found to separate them. The front is indeed not margined anteriorly, but the lateral margins are slightly advanced, so that it presents, in certain directions, the same truncate appearance seen in other species of the genus. The body beneath is black, slightly bronzed. The elytra of the female are gradually dilated posteriorly, so as to be about one-third wider than the thorax; in the male they are parallel on the sides; in both sexes obtusely rounded at the apex; the sides of the thorax are more rounded anteriorly in the female than in the male.

25. *L. estriatus*, piceus, subæneus, cinereo-pubescent, clypeo medio non marginato, thorace latitudine fere sesqui brevior, antrorsum angustato, et lateribus rotundato, angulis posticis subcarinatis divaricatis, acutis, subtilius punctato, linea dorsali postice sublævi, elytris subtilius punctatis, striis obsoletis, basi margineque testaceis, apice obtusis, antennis basi testaceis, articulo 3^{io} 2^{ndo} longiore et 4^{to} æquali. Long. .26.

Eagle Harbor, Lake Superior. Smaller than the preceding, which it resembles very

much, and is readily distinguished by the sides of the thorax being more rounded anteriorly, and the third joint of the antennæ being as long and nearly as wide as the fourth; the feet and under surface are black.

GAMBRINUS Lec.

Frons paulo producta, antice recte marginata, subconcava; labrum rotundatum, mandibulæ breves: antennæ articulis 2 et 3 subæqualibus, coniunctis sequente non longioribus, 4—10 triangularibus, gradatim paulo latioribus, ultimo duplo maiore, ovali, obtuso: prosternum antice lobatum, postice mucronatum, lateribus rectis, sutura antice vix excavata: coxæ posticæ laminis angustis, intus sensim paulo dilatatis: tarsi pubescentes, longius setosi, articulis 1—4 gradatim brevioribus, 5^{to} iterum longiore, unguiculis simplicibus.

The posterior angles of the thorax are finely carinated, and moderately produced. In form and structure approaches very near to *Limonius*, but is easily known by the last joint of the antennæ being considerably larger than the others, and by the first joint of the tarsi being longer than the second. To this genus possibly belongs *Elater stigma* Herbst, (*Käfer*, 10, 86, tab. 166, fig. 1,) which is, however, unknown to me; Dejean, in his catalogue, places it in *Limonius*; it seems to differ from the one here described by the feet and antennæ being fusco-testaceous.

The generic name is derived from *γαμβρος*, *socer*.

1. *G. armus*, virescenti-niger, nitidus, tenuiter cinereo-pubescent, thorace latitudine longiore, antrorsum subangustato, lateribus rectis, ad apicem subito oblique angustatis, minus subtiliter remotius punctato, postice subcanaliculato, elytris striis fortius punctatis, interstitiis discrete punctatis, macula magna humerali oblonga læte rufa, tarsis piceis. Long. .34.

Elater armus Say, Trans. Am. Phil. Soc. 6, 171.

One specimen from Georgia. The elytra, as in *Limonius*, are parallel on the sides, and obtusely rounded at the apex.

CORYMBITES Latr.

Frons plana, antice depressa, non marginata; labrum antice rotundatum; mandibulæ breves, acutæ, vel simplices, vel ante apicem dentatæ, vel truncatæ et scalprariæ: palpi articulo ultimo plus minusve dilatato: antennæ plus minusve serratæ (maris interdum pectinatæ) articulis 2 et 3 variis, 11^{mo} sæpe constricto, non maiore; prosternum antice lobatum, postice mucronatum, mucrone non vel vix inflexo, lateribus antice non vel vix excavatis: mesosternum non protuberans: coxæ posticæ laminis angustis, intus paulo dilatatis, non dentatis: tarsi longiusculi, pubescentes (vel subsetosi) articulis 1—4 sensim brevioribus (1^{mo} sæpe vix longiore) non lobatis, 5^{to} longiore, unguiculis integris.

A very extensive, but apparently natural genus, which may be easily divided into groups, for the purpose of facilitating the determination of the species. Some of these groups have received generic names, and, on a first glance, there appear to be certain peculiarities of habit, which render them easy to be recognised. With a large series of species, these differences appear to merge insensibly together, so that no well defined distinctions remain. For this reason, I consider the genera *Diacanthus* and *Pristilophus* as untenable: the latter, as founded by Latreille, is perfectly unintelligible, and as reformed by Germar, contains two very distinct forms, of which his first division (forming the genus

Melanactes of the present essay) must receive a distinct name, as the definitions both of Germar and Latreille absolutely exclude it, while the second division must be united with the present genus.

Our species may be grouped as follows:

A. Tarsi subtus æqualiter pubescentes.

1. Antennæ subserratæ, articulo 3^{io} cylindrico, sequentibus triangularibus, æqualibus :
frons subconvexa ; corpus dilatatum, pubescens, elytris præcipue testaceis - Sp. 1—11.
 2. Antennæ subserratæ, articulo 3^{io} cylindrico, 4^{to} sequentibus longiore ;
 - α. Corpus dilatatum supra præcipue glabrum, frons planiuscula - - Sp. 12—17.
 - β. Corpus valde dilatatum pubescens, frons valde concava - - Sp. 18.
 - γ. Corpus lineare, supra glabrum, antennis articulis 2 et 3 singulis 4^{to} vix minoribus - - - - - Sp. 19—20.
 3. Antennæ serratæ, articulo 3^{io} cylindrico, sequentibus triangularibus, æqualibus, 11^{mo} sub-constricto ; corpus lineare, glabrum vel pubescens - - - Sp. 21—24.
 4. Antennæ serratæ, articulo 3^{io} dilatato ; 4—10 æqualibus, 11^{mo} constricto : frons plana : corpus lineare parallelum - - - - - Sp. 25.
 5. Antennæ serratæ, articulo 3^{io} vario, 4—10 æqualibus, 11^{mo} constricto ; frons concava, corpus subparallelum - - - - - Sp. 26—31.
 6. Antennæ serratæ, articulo 3^{io} triangulari, præcipue 4^{to} æquali, 4—10 æqualibus, 11^{mo} præcipue non constricto ; frons subconvexa vel plana : corpus non dilatatum.
 - * Elytra postice rotundatim attenuata :
 - α. Thorax angulis posticis carinatis - - - - - Sp. 32—35.
 - β. Thorax angulis posticis non carinatis - - - - - Sp. 36—37.
 - ** Elytra postice oblique attenuata, fortius marginata - - - - - Sp. 38—41.
 7. Antennæ compressæ, vix serratæ, articulo 3^{io} sequenti æquali, 11^{mo} vix constricto : frons concava, corpus præcipue lineare - - - - - Sp. 42—45.
- B. Tarsi articulis 2—4 subtus ad apicem sericeo-spongiosi* - - - - - Sp. 46—49.

A.—1.

1. *C. hamatus*, crassiusculus, capite thoraceque atris dense subtilius punctatis, aureo-pilosis, hoc postice canaliculato lateribus rotundatis, angulis posticis subdivergentibus, margineque testaceis, elytris testaceis, macula laterali transversa margineque pone medium fuscis, striis profundis punctatis, interstitiis punctatis, abdomine rufo, pectore nigro, pedibus antennisque testaceis. Long. .43.

Elater hamatus Say, Trans. Am. Phil. Soc. 6, 170.

New Jersey, Mr. Guex, one specimen. A very peculiar and well marked species, having the form of *C. hieroglyphicus*, but very distinct by its characters. The third joint of the antennæ is not perceptibly larger than the second ; the front is more elevated than usual, and almost angulated at tip, the lateral margins converging so as almost to meet ; the palpi are black. The dense golden yellow hair of the thorax conceals the punctures, which are dense, but not coarse ; the lateral margin, posterior angles, and inflexed portion are rufo-testaceous ; the dorsal channel is distinct posteriorly. The striæ of the elytra are strongly impressed, the interstices convex and densely punctured.

Although the form of the front of this species is nearly that of *Cryptohypnus silaceipes*, the shape of the posterior coxæ, and the parallel sides of the prosternum, prevent its association with that species.

2. *C. rubidipennis*, crassiusculus, niger, supra flavo-pubescent, thorace non transverso, ante medium rotundatim angustato, angulis posticis vix divergentibus, dense subtiliter punctato, elytris luridis, striis impunctatis, interstitiis subtilissime punctulatis, pedibus ferrugineis, antennis nigris. Long. .37—.42.

Lake Superior, not rare. This species differs from the description given of *medianus* Germ. (Zeitsch. 4, 71) by the impunctured elytral striæ. The form of the body is as in the preceding; the third joint of the antennæ is a little longer than the second, but both together are not longer than the fourth.

3. *C. acutipennis*, crassiusculus, niger, subflavo-pubescent, thorace subtransverso, antrorsum angustato, lateribus rotundatis, angulis posticis subdivergentibus, dense punctulato, elytris testaceo-piceis, striis vix punctatis, interstitiis distincte punctulatis (apice maris acuminatis,) antennis pedibusque rufo-testaceis. Long. .38.

Diacanthus acutipennis Germ. Zeitschr. 4, 70.

Two specimens found at Ann Arbor, Michigan. Germar describes the striæ of the elytra as punctured; in one specimen they appear smooth, in the other they are feebly punctured; the female does not differ in form from the preceding species; the male has the apex of the elytra produced and acute. The third joint of the antennæ is one-half longer than the second.

4. *C. propola*, niger, cinereo-pubescent, thorace latitudine non brevior, apice subangustato, lateribus rotundatis, minus dense punctulato, angulis posticis subtestaceis, elytris lurido-testaceis, macula utrinque lunata, postice concava, ad medium fusca, tenuiter striatis, interstitiis punctulatis, antennis piceis basi testaceis, articulo 3^{io} 2^{ndo} sesqui longiore, pedibus piceis, vel testaceis. Long. .3— .33.

Lake Superior, Eagle Harbour; found also in Western New York. The less densely punctured thorax will distinguish this from the other species of this group. The third joint of the antennæ is shorter than the fourth, although longer than in the preceding species; by this character it forms a transition to *C. hieroglyphicus*. In my catalogue of Lake Superior insects, this is erroneously placed as *El. curiatus* Say.

5. *C. triundulatus*, elongatus, niger, cinereo-sericeus, thorace convexo, latitudine non longior, lateribus rotundatis, angulis posticis brevibus non carinatis, divaricatis, subtiliter dense punctato, subcanaliculato, elytris lateribus vix dilatatis, luteo-testaceis, fasciis tribus postice concavis subdendatis fuscescentibus, striis punctulatis, interstitiis planis, dense punctulatis, antennarum articulo 3^{io} sequenti brevior. Long. .28—.35.

Elatér triundulatus Randall, Bost. Journ. Nat. Hist. 2, 12.

Abundant at Lake Superior, and in Maine.

6. *C. hieroglyphicus*, crassiusculus, niger, cinereo-pubescent, thorace aureo-sericeo, dense subtiliter punctato, non transverso, lateribus late rotundatis, angulis posticis subtestaceis, elytris luteo-flavis, macula obliqua humerali per suturam extensa, alteraque ad medium lunata per suturam fere ad apicem producta nigris, striis vix punctatis, interstitiis subconvexis, punctatis, antennis pedibusque rufis, illis extus fuscescentibus, articulo 3^{io} 4^{to} non brevior. Long. .5.

Elatér hieroglyphicus Say, Trans. Am. Phil. Soc. 6, 172.

Lake Superior, Ohio, Maine; not rare. The joints of the antennæ diminish slightly in length from the fourth, but the difference is not so obvious as in many of the following species. The black markings of the elytra are connected by their sutural extensions; in one specimen the oblique line from the humerus to the suture is wanting, although the sutural portion of the spot is as large as in the other specimens.

7. *C. furcifer*, niger, cinereo-pubescent, thorace latitudine longiore, subtiliter punctato, lateribus late rotundatis, angulis posticis subtestaceis, elytris luteo-testaceis, macula humerali obliqua per suturam extensa, alteraque lunata pone medium nigris, striis punctatis, interstitiis distincte punctatis, antennis pedibusque piceis, illis articulo 1^{mo} testaceo. Long. .32.

One specimen found at Eagle Harbour, Lake Superior. Marked like the preceding, but in size only equal to *C. propola*, from which it differs by the longer thorax, and more deeply striate and more distinctly punctured elytra. In form it is a little less dilated than any of the preceding species.

8. *C. nubilus*, crassiusculus, niger, cinereo-pubescent, thorace non transverso, lateribus rotundatis, subtilissime punctulato, angulis posticis testaceis, elytris lurido-testaceis, maculis 3 pone basin (una communi) rotundatis, alteraque utrinque pone medium lunata, nigricantibus, tenuiter striatis, interstitiis fere planis punctulatis, antennis pedibusque nigris. Long. .35.

One specimen, collected in California by Mr. Child, and given me by Mr. Rathvon. The markings are on the same plan as those of the preceding species, but they are not dilated along the suture, and the anterior is broken up so as to form a rounded spot each side behind the humerus, and a larger less distinct one at the suture. The finer punctuation of the thorax, and the black feet, will enable it to be readily recognised.

9. *C. inflatus*, obesus, æneo-niger, cinereo-pubescent, fronte plana convexa, thorace convexo, dense subtilius punctato, subtransverso, lateribus antice rotundatis, elytris striis punctatis, interstitiis subconvexis, confertim punctulatis, antennis piceis basi rufescentibus, pedibus rufis. Long. .33—.45.

Elater inflatus Say, Ann. Lyc. 1, 258; Trans. Am. Phil. Soc. 6, 174; Germ. Zeitschr. 4, 74.

Common in the Southern and Western States; rare in Pennsylvania. The interstices of the elytra vary, being sometimes almost flat, and sometimes distinctly convex. This species is properly attached to the first division, from the other species of which it differs only by the elytra being less broadly margined; the joints of the antennæ following the fourth are equal; and the fourth is hardly perceptibly longer than the fifth.

10. *C. nitidulus*, piceo-æneus, tenuiter cinereo-pubescent, thorace convexiusculo, latitudine sublongiore, antrorsum subangustato, lateribus parum rotundatis, angulis posticis acutis productis, rufescentibus, minus dense subtiliter punctato, postice canaliculato, elytris striis impunctatis, interstitiis planis disperse punctulatis, antennis piceis basi pedibusque rufis. Long. .35—.4.

Abundant at Lake Superior. Smaller and more slender than the next species; hardly dilated on the sides: it is easily distinguished by its convex, less rounded, and less densely punctured thorax.

11. *C. aratus*, crassiusculus, æneo-niger, tenuiter cinereo-pubescent, thorace latitudine sublongiore, paulo convexo, lateribus antice rotundatis, angulis posticis acutis productis rufescentibus, postice profunde canaliculato, confertim, lateribus densius punctato, elytris striis tenuibus, punctatis, interstitiis præcipue planis, disperse punctulatis, pedibus rufis, antennis piceis. Long. .43—.53.

Abundant at Lake Superior: smaller and more slender than the next species, hardly dilated on the sides: it is easily distinguished by its convex, less rounded and less densely punctured thorax.

11. *C. aratus*, crassiusculus, æneo-niger, tenuiter cinereo-pubescent, thorace latitudine sublongiore, paulo convexo, lateribus antice rotundatis, angulis posticis acutis, productis, rufescentibus, postice profunde canaliculato, confertim, lateribus densius punctato, elytris striis tenuibus, punctatis, interstitiis præcipue planis, disperse punctulatis, pedibus rufis, antennis piceis. Long. 43—53.

Abundant at Lake Superior: closely resembles in form and characters *C. splendens*, but is distinctly pubescent, and a little more slender in its general form: the fourth joint of the antennæ is not longer than the fifth.

A —2.—a.

12. *C. splendens*, crassiusculus cupreo-æneus, vel brunneo-æneus, supra vix tenuissime pubescens, thorace paulo convexo, latitudine longiore, lateribus antice rotundatis, angulis posticis productis, rufescentibus, confertim lateribus confertissime punctato, elytris striis punctulatis, antennis nigris, pedibus prosternique lobo rufis. Long. 4—52.

Diacanthus splendens Ziegler, Proc. Acad. Nat. Sc. 2, 44.

Pennsylvania, Massachusetts, Lake Superior: it is *Elater metallicus* of Harris' catalogue. The epipleuræ are sometimes tinged with rufous. The specimens from Lake Superior usually have the thorax more densely punctured, but otherwise do not differ from those found nearer the Atlantic.

13. *C. æripennis*, crassiusculus, niger, supra glaberrimus, thorace minus convexo, latitudine sublongiore, lateribus late rotundatis, confertim punctato, angulis posticis elongatis, elytris viridi-æneis nitidis, striis punctatis, interstitiis minus dense punctulatis. Long. 5—58.

Aphotistus æripennis Kirby, Fauna Bor. Am. 150, (1837.)

Elater appropinquans Randall, Bost. Jour. Nat. Hist. 2, 5, (1838.)

Diacanthus æripennis Germ. Zeitschr. 4, 82.

Very abundant at Lake Superior: found by Randall in Maine. The elytra vary in colour, being sometimes almost coppery.

14. *C. carbo*, nigerrimus, supra glaber, thorace latitudine longiore, paulo convexo, dense lateribus confertissime punctato, antice angustato et lateribus rotundato, angulis posticis elongatis, elytris striis punctatis, interstitiis fere planis, punctulatis. Long. 56.

One specimen from Oregon. Not so broad in its form as *C. æripennis*, but having, like that species, the fourth joint of the antennæ conspicuously longer than the fifth: it resembles very much the next, but the thorax is entirely black, and the dorsal line is very faint, and visible only near the base.

15. *C. lateralis*, nigerrimus, supra glaber, thorace latitudine longiore, paulo convexo, dense lateribus sanguineis confertissime punctato, antice angustato et lateribus rotundato, angulis posticis productis, dorso acute canaliculato, elytris striis vix punctulatis, interstitiis fere planis punctulatis. Long. 54.

One specimen, Oregon, Col. M'Call. The inflexed portion of the thorax, as well as a broad lateral margin, is sanguineous: the antennæ are as in the two preceding species.

16. *C. coniungens*, niger, parce griseo-pilosus, thorace canaliculato, latitudine longiore, antice angustato, convexiusculo, ante basin paulo latiore, lateribus late rotundatis, sat punctato, lateribus paulo densius, elytris lateribus vix dilatatis, apice vix oblique attenuatis, profunde striatis, striis punctatis, interstitiis subbiseriatim punctatis, antennis rufo-piceis, pedibus ferrugineis. Long. .42.

One specimen, California, Mr. J. Child. This species at first seems similar to *C. æthiops*, but the joints of the antennæ are not broad and compressed, but are formed as in the preceding species: the third joint is considerably longer than the second, and a little longer than the fourth, so that it cannot be associated in the division with *C. rotundicollis* and *C. sulcicollis*, to which it forms a transition by its less dilated elytra.

17. *C. pulcher*, crassiusculus, vix tenuissime pubescens, niger, thorace quadrato, convexo, lateribus antice rotundatis, angulis posticis acutis paulo productis, confertim punctato, sanguineo, vitta dilatata dorsali margine prosternoque nigerrimis, elytris testaceis, sutura, macula elongata humerali, fasciaque pone medium transversa nigris, striis profundis punctulatis, interstitiis parce punctulatis, abdominis lateribus sanguineis. Long. .53.

One specimen from New Hampshire in Dr. Harris' collection. It closely resembles *Ela-ter cruciatus* Linn. of Europe, but differs (according to description) by the black feet and antennæ. This species might perhaps be more naturally placed in the preceding division near *C. hieroglyphicus*: the joints of the antennæ do not diminish in size after the fourth, as in the preceding species of this division: the fourth is, however, decidedly longer than the fifth.

A.—2.—6.

18. *C. crassus*, obesus, piceo-niger, vix tenuissime pubescens, fronte profunde concava, thorace transverso, inflato, lateribus antice rotundatis, apice fortius transversim impresso, minus dense punctato, elytris striis punctatis, interstitiis planis parcius punctatis, pedibus piceis. Long. .55.

Kentucky, Dr. Harris; Pennsylvania, Dr. Melsheimer. The deep impression along the apical margin of the thorax is dilated at the angle, each side, and is a remarkable character. It is much more robust and inflated in its form than any other of our species.

A.—2.—5.

19. *C. rotundicollis*, angustatus, niger, glaber, thorace quadrato, latitudine paulo brevior, lateribus rotundato, angulis posticis parvis acutis divaricatis, convexo, parce subtilius punctato, (sæpe sanguineo,) elytris lateribus vix dilatatis, apice rotundatim attenuatis, striis profundis impunctatis, interstitiis vix punctulatis, pedibus nigris, tarsis fere testaceis. Long. .41.

Ela-ter rotundicollis Say, Ann. Lyc. 1, 259, (var. thor. sanguineo.)

Vermont, Prof. Adams. The black variety is from Pennsylvania, and was given me by Rev. D. Ziegler. The remarkably rounded, quadrate thorax, with small, sharp, diverging angles, will distinguish this from any other native species. It differs from all the preceding by the more parallel elytra, which behind the middle are not obliquely narrowed, but regularly rounded. The fourth joint of the antennæ, although longer than the following, is not so much so as in the species just described: the antennæ are hardly serrate, so that the fourth and following joints are very little wider than the third.

Diacanthus sticticus and *ruscicollis*, Germ. (Zeitschr., 4, 74,) seem to be closely related to this species, but must be different: the former has the thorax slightly rounded on the sides; the latter has the thorax and feet rufous, and the thorax strongly rounded on the sides.

Elater rubricollis Say, (Journ. Acad. 3, 177,) quoted by Germar, under his *D. ruscicollis*, is in reality Herbst's species of the same name, and will be found under *Elater rubricollis* of the present essay.

20. *C. sulcicollis*, elongatus, parallelus, nigro-piceus, glaber, thorace antice sublatiore latitudine fere sesqui longiore, lateribus rectis, apice breviter rotundatis, minus convexo, confertim punctato, profunde canaliculato, angulis posticis acutis, elytris apice rotundatim attenuatis, striis punctatis, interstitiis modice convexis, punctulatis, epipleuris pedibusque piceo-rufis. Long. .55—.6.

Elater parallelus || Say, Ann. Lyc. 1, 256.

Elater sulcicollis Say, Trans. Am. Phil. Soc. 6, 168.

Middle and Southern States, rare. The joints of the antennæ are moderately dilated and diminish gradually in length from the fourth.

A.—3.

21. *C. nubilipennis*, elongatus linearis, vix pallide pubescens, niger, fronte subconcava, thorace latitudine longiore, antrorsum vix angustato, lateribus paulo rotundatis, minus dense punctato, postice canaliculato, elytris parallelis, striis punctatis, interstitiis disperse punctulatis, testaceis pone basin et ad medium infuscatis. Long. .34.

One specimen from Oregon, Col. M'Call. The posterior angles of the thorax are long and acute; the third joint of the antennæ is equal in length to the fourth, but is not at all dilated. The last joint is wanting, so that we cannot be certain that it belongs to this division; its general appearance, however, prevents it from being placed in any other. The front is slightly concave, not showing the quadrate outline which may be perceived in the others of this group.

22. *C. ærarius*, elongatus, supra glaber, splendide viridiaureus, thorace latitudine longiore, antrorsum subangustato, lateribus late rotundatis, sat dense lateribus confertim punctato, cupreo-marginato, postice subcanaliculato, elytris striis punctatis, interstitiis parce subtiliter punctulatis, antennis nigris, articulo 3^{io} non dilatato. Long. .45—.56.

Elater ærarius Randall, Bost. Journ. Nat. Hist. 2, 7.

Elater (diacanthus) Racinei Chevrolat, Rev. et Mag. de Zoologie, 1852.

Lake Superior, Maine, Newfoundland. This must be very similar to *C. resplendens*, (Germ. Zeitschr. 4, 60,) which, however, must have the third joint of the antennæ dilated. In my catalogue of Lake Superior Coleoptera, I have placed them as synonymous, but, until comparisons are made, they must be considered as distinct. The front in this species is not slightly concave as in the preceding, but flattened, not quite so straight along the anterior part, where the declivity commences, as in the next two species, but showing a tendency to become quadrangular; the antennæ of both sexes are strongly serrate.

Varieties occur of a golden copper, and also of a bluish green colour.

23. *C. furtivus*, elongatus, linearis, æneo-piceus, cinereo-pubescens, thorace latitudine longiore, antrorsum vix angustato, lateribus rotundatis, punctato, postice profunde canaliculato, elytris striis punctulatis, interstitiis fere planis, sat dense punctulatis, pedibus piceis. Long. .45.

One male specimen, Oregon. This species exactly resembles *C. appressifrons* in appearance; the third joint of the antennæ, however, is not dilated, and the elytra are slightly obliquely attenuated behind the middle; the front is almost flat, and the declivity commences along a straight line, which gives a quadrate appearance to the front, and indicates an osculation with *Limonius*.

24. *C. atropurpureus*, elongatus, linearis, cupreo-piceus, cinereo-pubescens, thorace latitudine longiore, convexo antice angustato, lateribus postice subrectis, antice rotundatis, sat dense punctato, canaliculato, elytris striis vix punctulatis, interstitiis planiusculis parce punctulatis, epipleuris pedibusque rufis, antennis piceis. Long. .44.

Melsheimer, Proc. Acad. Nat. Sc. 2, 215.

I have only seen the typical female specimen in Dr. Melsheimer's collection; it was found in Pennsylvania. The antennæ are hardly as long as the thorax, and the third joint is not at all dilated. The front is as in the preceding species.

A.—4.

25. *C. appressifrons*, piceus, obsolete ænescens, cinereo-pubescens, cylindricus, postice obtusus, thorace latitudine longiore, antice non angustato, lateribus fere rectis, angulis posticis acutis divaricatis, sat punctato, postice canaliculato, elytris striis acutis, punctulatis, interstitiis fere planis punctatis, epipleuris pedibusque rufo-piceis.

Mas, thorace latitudine fere sesqui longiore, modice convexo: antennis thorace longioribus. Long. .45—.5.

Elater appressifrons Say, Ann. Lyc. 1, 267; Harris, Insects Injurious to Vegetation, 1st, 49; 2d, 48.

Corymbetes cylindriformis † Germ. Zeitschr. 4, 64.

Femina, thorace latitudine paulo longiore, magis convexo: angulis posticis minus productis; antennis thorace brevioribus. Long. .6—.72.

Elater brevicornis Say, Ann. Lyc. 1, 265.

Corymbetes parallelopipedus Germ. Zeitschr. 4, 66.

Middle States, abundant. We are indebted to Dr. Harris for the discovery of the interesting difference in form, in the sexes of this species.

For the reasons upon which I refuse to adopt Germar's opinion, that this is the *Elater cylindriformis* *Herbst*, see the remarks under *Limonius cylindriformis*.

A.—5.

26. *C. obscurus*, ater, subtiliter nigro-pubescens, subparallelus, fronte concava thorace latitudine non longiore, antrorsum vix angustato, lateribus late rotundatis angulis posticis breviusculis, parum convexo, confertim punctato, linea dorsali vix conspicua lævi, elytris pone medium subattenuatis, striis tenuibus, interstitiis fere planis confertim punctulatis. Long. .46.

One specimen, California, Mr. Pease. Body moderately elongated, not dilated on the sides, black, not very shining, finely pubescent with grayish black hair; head broadly concave, punctured; thorax not longer than wide, slightly convex, densely punctured,

especially at the sides, with a hardly perceptible smooth not impressed dorsal line; sides broadly rounded, posterior angles short, truncate, slightly divergent. Elytra not wider than the thorax, very slightly obliquely attenuated behind the middle; striæ fine, well impressed; interstices tolerably densely, finely punctured. Legs and antennæ entirely black; the latter as in the male of *C. appressifrons*, with the joints triangular, not produced at the angle; the third joint a little smaller than the fourth; the eleventh elongated, deeply constricted.

27. *C. cribrosus*, ater, breviter nigro-pubescent, subparallelus, fronte concava, thorace latitudine longiore, lateribus late rotundato, antrorsum vix angustato, canaliculato, grossius, lateribus dense punctato, angulis posticis acutis subdivergentibus, elytris striis punctulatis, interstitiis punctatis et rugosis, fere scabris. Long. .54.

California, San Francisco. The antennæ are much more strongly serrate than in any of the preceding species; the joints are decidedly broader than long, and somewhat produced externally; the third joint is smaller than the fourth, and the eleventh is constricted. The elytra are very slightly obliquely attenuated behind the middle.

28. *C. signaticollis*, niger, nitidus, supra glaber, subparallelus, fronte concava, thorace latitudine longiore, parce grossius punctato, antrorsum vix angustato, lateribus late rotundatis, læte rufo, vitta dorsali lata, angulisque posticis divergentibus nigris: elytris striis punctatis profundis, interstitiis vix punctulatis, pedibus piceis. Long. .33.

Diacanthus? *signaticollis* Melsheimer, Proc. Acad. Nat. Sc. 2, 216.

Middle and Southern States, not common. The antennæ of this species are very strongly serrate, the joints not transverse, with the outer angle produced; the third is somewhat smaller than the fourth; the eleventh constricted. The prosternum is entirely black, the inflexed portion of the prothorax is red, becoming black towards the sternum.

29. *C. trivittatus*, ferrugineus, cinereo-pubescent, subparallelus, capite nigro, concavo, thorace latitudine sublongiore, antrorsum modice angustato, lateribus rotundatis, angulis posticis acutis divergentibus, maculaque magna dorsali nigris, sat dense punctato, leviter canaliculato, elytris flavo-testaceis, sutura vittaque discoidali, sæpe ante medium interrupta nigris, striis irregulariter, interstitiis vage punctatis, tarsis piceis, antennis nigris articulo 3^o sequenti multo minore, vix triangulari. Long. .46—.68.

Abundant in the upper portions of the Southern States; sent me by Zimmermann, as *Pristilophus 3-vittatus* Germ. MSS. This species is of difficult location, but from its concave front, narrow form, and strongly serrate antennæ, it seems most naturally placed in the present division, forming the transition from those having the third joint of the antennæ dilated, to the two following, in which it is almost cylindrical. The pubescence of the under surface is silvery, and the sutures of the pectus are blackish; the last joint of the antennæ is strongly constricted.

30. *C. æthiops*, niger, tenuissime cinereo-pubescent, subparallelus, postice magis angustatus, fronte concava, thorace latitudine longiore antrorsum subangustato, lateribus late rotundato, canaliculato, punctato, densius ad latera, elytris striis punctatis, interstitiis vage punctatis, antennis articulo 3^o sequenti non brevior, vix dilatato. Long. .53—.83.

Elatæ æthiops Herbst, Käfer, 10, 70; tab. 164, fig. 4.

Pristilophus æthiops Germ. Zeitschr. 4, 86.

Middle States, not rare. The tarsi are somewhat more densely pubescent than usual, but by no means brush-like beneath, as in the large species with prominent mesosternum, placed by Germar in the same genus with this species, but which I have removed under the name *Melanactes*.

31. *C. maurus*, ater, minus nitidus, tenuissime fusco-pubescent, subparallelus, fronte concava, thorace latitudine longiore, lateribus postice parallelis antice rotundatis, angulis posticis acutis divergentibus, leviter canaliculato, dense, lateribus confluentur punctato, elytris striis punctatis, interstitiis fere planis sat dense punctatis et rugosis, antennarum articulo 3^{io} subdilatato, 4^{to} non brevior. Long. .63.

Oregon, Col. McCall. Sufficiently distinct from any other species herein described, and apparently more nearly related to *C. æthiops*; the third joint of the antennæ is triangular, as long, but only half as wide as the following, which are acutely triangular, but not produced at the angle; the eleventh joint is not longer than the tenth, not acuminate, but still distinctly constricted.

A.—6*.—a.

32. *C. vernalis*, ater, tenuiter fusco-pubescent, thorace latitudine longiore, antrorsum angustato, lateribus rotundatis, subtiliter punctato, angulis posticis divergentibus, elytris læte flavis, macula scutellari, alterisque utrinque duabus subrotundatis nigris, striis punctatis, interstitiis subtilissime punctulatis, fere planis, antennæ maxime serratis, articulo 3^{io} sequenti non minore. Long. .28.

Germar, Zeitschr. 4, 56.

Elater vernalis Hentz, J. Ac. Nat. Sc. 5, 374; tab. 13, fig. 2: Say, Tr. Am. Phil. Soc. 6, 172.

Middle, Southern, and Western States, rare. The third joint of the antennæ is not smaller than the fourth, but its outer angle is not produced.

33. *C. Kendallii*, nigro-cupreus, tenuiter cinereo-pubescent, thorace latitudine vix longiore, antrorsum angustato, lateribus rotundato, angulis posticis acutis divergentibus, convexo, profunde et late canaliculato, punctato densius ad latera, elytris luteo-testaceis, striis punctulatis, interstitiis fere planis, subtilius punctatis, plaga elongata versus apicem suturaque purpurascens, antennis articulo 3^{io} sequenti non minore. Long. .6.

Germar, Zeitschr. 4, 57.

Ctenicerus Kendallii Kirby, Fauna Bor. Amer. 149; tab. 2, fig. 7, (1837.)

Elator anchorago Randall, Bost. Journ. Nat. Hist. 2, 5, (1838.)

One specimen, found on the north shore of Lake Superior. Mr. Randall found it in Maine: Kirby's specimen was found in lat. 65°. The thorax is so deeply and broadly channelled that the disc appears longitudinally elevated each side: the antennæ of the male are pectinate.

34. *C. cuprascens*, æneo-cupreus, æqualiter cinereo-pubescent, thorace latitudine sublongiore, antrorsum angustato, lateribus rotundato, angulis posticis elongatis, divergentibus, canaliculato, punctato, densius ad latera, elytris striis punctulatis, interstitiis planis confertim subtilius punctulatis, pedibus rufis, antennis piceis, basi rufescentibus, articulo 3^{io} sequenti paulo minore, 11^{mo} non constricto. Long. .63.

One specimen, Saratoga, Mr. James Thomson. Very similar to the next, but is more robust than the female of that species: the principal differences are that the antennæ have

not the last joint constricted, and that the pubescence of the upper surface is uniformly distributed.

35. *C. micans*, æneo-cupreus, cinereo-pubescens, thorace latitudine longiore, antrorsum subangustato, lateribus antice rotundatis, angulis posticis elongatis divergentibus, subcanaliculato, punctato densius ad latera, elytris striis punctulatis, interstitiis planis confertim subtilius punctulatis, spatiis transversis denudatis subfasciatis, antennis piceis vel nigris, articulo 3^{io} sequente vix minore, 11^{mo} constricto. Long. .5—·6.

Germar, Zeitschr. 4, 62.

New York and New England. In the female the antennæ are shorter than the thorax, and the elytra behind the middle are more suddenly narrowed to the apex.

A.—6*.—6.

36. *C. tarsalis*, elongatus, æneo-niger, vix nitidus, tenuiter fusco-pubescens, thorace latitudine fere sesqui longiore, antrorsum subangustato, lateribus vix late rotundatis, angulis posticis productis, vix obsolete carinatis, minus convexo, confertim lateribus confertissime punctato, elytris luteis, sutura nigricante, striis punctatis, interstitiis subconvexis, dense punctulatis, pedibus testaceis, antennis nigris articulo 3^{io} sequenti fere æquali, 11^{mo} constricto. Long. .43.

Athous tarsalis Melsheimer Proc. Acad. Nat. Sc. 2, 157.

Massachusetts to Maryland, not common. It is the *Elater suturalis*, Harris' Cat., according to a specimen communicated to me by Dr. Harris. Dr. Melsheimer describes his specimen as having black tarsi, but on examination I find that they are only fuscous: in most specimens they are no darker than the tibiæ. In his specimen, as in Dr. Harris', there is an oblong fovea at the apex of the clypeus, which, however, is wanting in my specimens. There can be no doubt about the generic position of this species; it only differs from the neighbouring species in having the carina of the posterior thoracic angles less distinct.

A variety in Dr. Harris' collection, from New Hampshire, is a little more lustrous, and has the interstices of the elytra less densely punctulate.

37. *C. telum*, valde elongatus, linearis, fusco-niger, subæneus, tenuiter cinereo-pubescens, thorace latitudine sesqui longiore, antrorsum vix angustato, lateribus rectis, angulis posticis valde divergentibus non carinatis, confertim lateribus confertissime punctato, elytris tenuiter striatis, interstitiis confertissime rugosis, pedibus fusco-piceis, antennis elongatis, nigerrimis. Long. .4.

One specimen, Oregon. Although having the same structure of antennæ, and the same sculpture of thorax, as the preceding, this species, by its form, approaches very closely to the species of a subsequent division, containing *C. pyrrhos*: the triangular joints of the antennæ, and the slightly convex front, require it to be placed in this division.

A.—6**.

38. *C. semiluteus*, ater, tenuiter fusco-pubescens, thorace latitudine longiore, lateribus postice parallelis, ante medium rotundatis, confertim subtilius punctato, linea dorsali tenui lævi parum convexo, angulis posticis non divergentibus, elytris minus convexis fortius marginatis luteo-testaceis, antice parallelis pone medium oblique attenuatis, striis subtiliter punctatis, interstitiis confertissime punctulatis, antennarum articulo 3^o sequenti æquali. Long. .48.

One specimen, California, collected by Mr. Child. This species with the following establishes a passage to *C. rubridipennis* and others above described: the sides of the elytra are however less dilated, so as not to alter the regular outline of the anterior portion; the antennæ are also more compressed, and the third joint is fully as large as the following ones: the last joint is wanting, but is probably not constricted.

39. *C. fallax*, ater, cinereo-sericeus, thorace latitudine sublongiore, antrorsum angustato, lateribus rotundatis, angulis posticis brevibus divaricatis apice obtusiusculis, confertim punctato, postice subcanaliculato, elytris piceo-testaceis tenuiter striatis, interstitiis confertissime subtiliter punctulatis fasciis duabus subdenudatis notatis, fortius marginatis, pone medium oblique attenuatis, pedibus testaceis femoribus obscurioribus, antennis nigris, articulo 3^{io} sequente non brevior, parum dilatato. Long. .42.

Elater fallax Say, Trans. Am. Phil. Soc. 6, 170.

One specimen, Lake Superior, Dr. Harris has found it in New Hampshire. This species completes the connexion with the species in the first group of the genus: in addition to the obliquely attenuated and broadly margined elytra, the third joint of the antennæ is only half as wide as the fourth: the last joint is not constricted. The bands on the elytra are produced by the hairs being placed in a different direction, so as not to reflect the light when the other portions show a sericeous lustre.

40. *C. divaricatus*, fusco-piceus, breviter griseo-pubescent, fronte paulo concava, thorace parum convexo, latitudine sublongiore antrorsum paulo angustato, lateribus omnino rectis apice subito inflexis, angulis posticis elongatis divaricatis, confertim sat grosse punctato, canaliculato, elytris pone medium oblique attenuatis, plus minusve fusco-testaceis, striis punctatis vix impressis, interstitiis subtilius punctatis, antennis articulo 3^{io} 4^{to} æquali, 11^{mo} vix constricto. Long. .37—.45.

Georgia and Carolina, abundant. This species will be easily distinguished by the long divergent posterior angles of the thorax, and the straight sides which are inflexed suddenly at the apex, so that the anterior angles become rounded: the apex is transversely impressed and excavated each side as in a few other species. The elytra are usually brownish, but are sometimes as dark as the thorax.

40. *C. appressus*, latiusculus, niger, supra glaber, thorace latitudine brevior, antrorsum angustato, lateribus late rotundatis, angulis posticis productis subdivergentibus, obsolete carinatis, apice lateribusque postice latioribus læte rufis, confertim subtiliter punctato, elytris postice suboblique attenuatis, fortius marginatis, læte flavis, sutura antice latiore, macula oblonga humerali, lineaque pone medium nigerrimis, striis vix punctatis, interstitiis planis punctulatis, tibiis basi testaceis, antennis nigris, articulo 3^{io} 4^{to} æquali, 11^{mo} vix constricto. Long. .4.

Elater appressus Randall, Bost. Journ. Nat. Hist. 2, 11.

Corymbites mirificus Le Conte, Agass. Lake Sup. 228.

One specimen, Lake Superior; Randall found it in Maine. By its shorter thorax and broader form, this species is remarkably different from all the other species here described, in which the third joint of the antennæ is dilated; but by the more distinctly margined elytra it shows an affinity to the two preceding species. The under surface is black, with the exception of the inflexed margin of the prothorax, which is red, with a large discoidal black spot; the black line of the elytra is connected with some indistinct black marks about the middle, which in some specimens may form a transverse fascia.

A.—7.

42. *C. spinosus*, modice elongatus, piceo-niger, tenuiter cinereo-pubescent, thorace latitudine longiore, parum convexo, antrorsum subangustato, lateribus late rotundatis, confertim subtiliter punctato, angulis posticis elongatis, subtestaceis, elytris piceo-testaceis, pone medium suboblique angustatis, dense punctatis, obsolete striatis, pedibus piceis, antennis nigris, articulis elongatis, 3^{io} sequenti non angustiore. Long. .48—.62.

Lake Superior, not rare. This species is an osculant between this division from which it borrows the slender subquadrate antennal joints, and the first division, to which it approaches by the somewhat obliquely attenuated elytra; the elytra are, however, not strongly margined, and possibly a nearer approach is made to *C. tarsalis*, of the preceding division. The posterior angles of the thorax are finely and strongly carinate, and the carina is parallel to the lateral margin. The sides of the thorax are more rounded in the female than in the male, and the thorax is less narrowed in front; the antennæ of the female are hardly longer than the thorax, those of the male are nearly half as long as the body.

43. *C. pyrrhos*, valde elongatus, linearis, fusco-testaceus, vel fuscus pubescens, fronte subconca, thorace latitudine plus sesqui longiore, subconvexo, confertim punctato, linea tenui dorsali lævi, angulis posticis elongatis, divaricatis, elytris striis punctatis, interstitiis vage punctatis, vix convexis, abdomine, pedibus, antennisque flavo-testaceis, his articulo 3^{io} sequenti æquali. Long. .67—.84.

Mas, thorace lateribus fere rectis, elytris postice haud oblique attenuatis; antennis valde elongatis.

Elater pyrrhos Herbst, Käfer, 10, 30; tab. 160, fig. 11: Say, Trans. Am. Phil. Soc. 6, 186.

Femina, thorace lateribus obtuse subangulatis, elytris paulo dilatatis et oblique attenuatis.

Athous pyrrhicus Hald. Proc. Acad. Nat. Sc. 1, 303.

Athous vagrans Melsheimer, Proc. Acad. Nat. Sc. 2, 153.

Athous æqualis Melsheimer, Proc. Acad. Nat. Sc. 2, 153.

Middle, Southern, and Western States, not rare. Although placed in *Athous* by many authors, this species does not differ in any respect from *Corymbites*; the first joint of the tarsi is not as long as the two following, nor is the front margined anteriorly.

44. *C. bivittatus*, valde elongatus, linearis, nigro-piceus, fusco-pubescent, fronte concava, thorace latitudine plus sesqui longiore, antrorsum paulo angustato, lateribus rectis, angulis posticis elongatis testaceis, scabro-punctato, margine apicali, lineaque dorsali sæpe obsoleta testaceis, elytris testaceis, sutura, vitta dorsali margineque plus minus nigro-piceis, striis punctatis, interstitiis planis scabris, antennis piceis vel fuscis articulo 3^{io} sequente paulo brevior. Long. .32—.42.

Campylus? bivittatus Melsheimer, Proc. Acad. Nat. Sc. 2, 219.

Middle, Southern, and Western States. A variety found in New Jersey by Mr. Guex, has the elytra luteous with the exception of a narrow black sutural and marginal line; another from Illinois has the thorax testaceous, with two broad dorsal vittæ, and a narrow marginal line blackish. The feet are sometimes piceous, sometimes testaceous. The antennæ are half as long as the body in my specimens, all of which appear to be males.

45. *C. iaculus*, valde elongatus, linearis, fusco-piceus, fusco-pubescent, fronte valde concava, antice submarginata, thorace latitudine plus sesqui longiore, lateribus rectis parallelis, apice paulo rotundatis, confertim punctato, angulis posticis divergentibus, productis, elytris striis punctatis, interstitiis subconvexis, rugose punctulatis, pedibus piceo-testaceis, antennis articulo 3^{io} sequente vix minore. Long. .45.

Two specimens, San Diego, California. Although differing slightly in the form of the front, and in the smaller size of the fourth tarsal joint, this species is so exact a miniature of *C. pyrrhos*, that it cannot be separated as a distinct genus.

Body dark fuscous, covered with fine short brownish gray hair; head densely punctured, deeply concave, with the lateral margins indistinctly uniting at tip; eyes prominent. Antennæ half as long as the body, second joint small; the following ones compressed, elongate, very slightly triangular, the third not quite as long as the fourth, the eleventh hardly acuminate. Thorax more than one-half longer than wide, sides straight, except at the apex, where they are very slightly rounded; posterior angles elongate, acute, slightly diverging, carina sharp, near the lateral margin; disc densely and coarsely punctured; elytra parallel, rounded posteriorly, striæ fine, subpunctulate, interstices very slightly convex, rugosely punctulate, especially near the striæ; beneath somewhat paler, legs almost testaceous, tarsi with the first joint decidedly longer than the second, and with the fourth joint one-half as long as the third.

B.

46. *C. insidiosus*, æneo-niger, longiusculus, cinereo-pubescens, thorace minus convexo, angulis anticis foveatis, quadrato, lateribus parallelis antice rotundatis, angulis posticis angustis, acutis carinatis divergentibus, minus dense punctulato, subcanaliculato, elytris densius punctatis, testaceis, obsolete striatis, antennis vix serratis piceis, articulis 2 et 3 æqualibus sequente coniunctis longioribus, ano pedibusque fusco-testaceis. Long. .45.

Lake Superior, rare. A very easily distinguished species, of a somewhat elongate form, with the elytra slightly obliquely attenuated behind the middle. The first joint of the tarsi is hardly longer than the second.

47. *C. falsificus*, æneo-niger, elongatus cinereo-pubescens, thorace latitudine longiore, convexiusculo, lateribus rectis parallelis apice rotundatis, angulis posticis parvis divaricatis non carinatis, subtestaceis, disco subtiliter punctato, subcanaliculato, elytris testaceis, tenuiter striatis, interstitiis dense punctatis, sutura infuscata, pedibus testaceis, antennis piceis, vix serratis, basi testaceis, articulis 2 et 3 æqualibus coniunctis 4^{to} longioribus. Long. .3—·35.

In form closely resembles the preceding, but the smaller size and non-carinated angles of the thorax distinguish it: the thorax at the apex is indistinctly margined, and somewhat impressed near the angles: the first joint of the tarsi is conspicuously longer than the others.

In case the small spongy tuft at the tip of the tarsal joints should not be considered of sufficient importance to warrant the grouping of the species here adopted, the natural position of this and the preceding species would be in Div. (2,) in the same group with *C. inflatus*, forming the transition between that in *C. rotundicollis*.

48. *C. mendax*, piceo-æneus, elongatus, cinereo-pubescens, thorace latitudine longiore, convexo, ad apicem utrinque transversim impresso, lateribus ante medium rotundatis, angulis posticis carinatis divergentibus, confertim punctato, subcanaliculato, elytris striis punctatis, interstitiis planis rugose punctulatis, antennis nigris, vix serratis, articulo 3^o 2^{ndo} paulo longiore, coniunctis 4^{to} longioribus, pedibus piceis. Long. .41.

One specimen, Lake Superior: has the appearance of *Limonius*, but the front is not

marginated anteriorly, and not quadrate: its real affinities are with the two preceding species, from which it differs by its more convex and coarsely punctured thorax. The elytra are somewhat obliquely narrowed posteriorly, and more strongly marginated than in the two preceding. The first joint of the tarsi is not longer than the second.

49. *C. angularis*, nigro-piceus, valde elongatus, tenuiter pubescens, thorace latitudine fere sesqui longiore, antice non angustato, parum convexo, lateribus fere rectis, apice submarginato, angulis anticis rufescentibus latius marginatis, angulis posticis acutis divaricatis, setaceis, carina margini valde approximata, confertim punctato, elytris striis punctulatis, interstitiis rugose-punctulatis, pedibus piceis, antennis nigris, basi piceis, subserratis, articulo 3^{io} 4^{to} non brevior, subcylindrico. Long. .35.

One specimen, Oregon. Although evidently allied to the others in this division, the third joint of the antennæ is considerably narrower than the following ones: the curious reflexed margin of the anterior thoracic angles will easily distinguish this species: the sides of the thorax are almost straight, slightly rounded at the apex, and before the basal angles: the first joint of the tarsi is slightly longer than the second.

ASAPHES Kirby.

Although but one species of this genus is described by Kirby and another by Germar, I find that several of our Elaters possess characters which require them to be associated with his type. They seem to form a natural group approaching most nearly to *Corymbites*, and indeed differing from that genus only in the structure of the tarsi. The second and third joints of the tarsi are dilated beneath into a short spongy lobe: the first joint is as long as the second and third together, and usually spongy at the tip: the fourth joint is small and narrow, received upon the third, and is sometimes also spongy beneath: the fifth joint is elongate with simple claws.

Our species may be grouped according to the presence or absence of the basal fissures and carinæ of the thorax. The third joint of the antennæ is more or less dilated and usually but little smaller than the fourth. The first group osculates with *Corymbites*: the second with *Athous* and *Pedetes*.

A. Thorax fissuris basalibus distinctis; angulis posticis carinatis.

1. *A. hemipodus*, crassus, nigro-piceus, subænescens, tenuiter griseo-pubescens, thorace subtransverso valde convexo, transversim subcorrugato, modice punctato, densius ad latera, lateribus rotundatis, angulis posticis parvis divergentibus, elytris ad medium latioribus, dein oblique angustatis, striis punctulatis, interstitiis vage punctatis, pedibus obscure rufis. Long. .61.

Elater hemipodus Say, Ann. Lyc. 1, 254: Trans. Am. Phil. Soc. 6, 176.

One specimen, Maryland, Prof. Adams: a curious robust species which exhibits a wonderful resemblance to *Corymbites crassus* above described. The transverse wrinkles of the thorax are not mentioned by Say, and are possibly not constant. The elytra have four broad faint impressions, producing a slight elevation about the middle, nearer to the side than to the suture: the third joint of the antennæ appears to be about the same size as the fourth, and hardly narrower.

2. *A. memnonius*, atro-fuscus, fusco-pubescent, thorace non transverso, antice vix angustato dense punctato, linea lævi dorsali vix distincta postice impressa, angulis posticis parvis non divergentibus, elytris confertim punctatis, striis distincte punctatis, antennis pedibusque piceo-rufis. Long. .63—.82.

Elater nemnonius (err. typ.) Herbst, Käfer, 10, 29, tab. 160, fig. 10: Say, Trans. Am. Phil. Soc. 6, 176.

Pedetes (Asaphes) ruficornis Kirby, Fauna Bor. Am. 146.

Maine, Ohio, Pennsylvania, Alabama. The thorax of the female is more convex than the male, and more rounded on the sides. The interstices of the elytra are usually slightly convex, but one individual from Mr. Guex has them entirely flat. The carinæ of the posterior angles of the thorax are parallel with the margin and very strongly marked.

3. *A. baridius*, nigro-fuscus, fusco-pubescent, thorace subtransverso, antice angustato, lateribus ante medium valde rotundatis, dense punctato, linea dorsali postice subimpressa, angulis posticis non divaricatis, elytris striis punctatis, interstitiis subconvexis confertim punctatis, antennis pedibusque rufo-piceis. Long. .90.

Elater baridius Say, Trans. Am. Phil. Soc. 6, 176.

Hemicrepidius Thomasi Germ. Zeitschr. 1, 213.

Maine to Georgia. I was at first inclined to believe this merely a variety of the preceding, but as the difference in the form of the thorax cannot be altogether sexual, they must be considered as distinct: the carinæ of the posterior angles of the thorax, as in the preceding, are very strong and parallel with the margin.

4. *A. morio*, niger, nitidus, parce pubescens, thorace latitudine non longiore parce punctato, postice canaliculato, angulis posticis non divergentibus, carina divergente, elytris striis profundis punctatis, interstitiis subconvexis, minus dense punctulatis. Long. .70.

One female, Oregon, Col. M'Call: the sides of the thorax are broadly rounded before the middle. This species has the robust form of *A. memnonius*, but the thorax is quite finely and thinly punctured at the middle, and more coarsely and densely at the sides: the carinæ of the posterior angles of the thorax are not parallel with the sides. The striæ of the elytra are more strongly punctured before the middle, and the outer striæ are deeper than those towards the suture: the interstices are moderately convex, finely not densely punctulate; from each puncture proceeds a short blackish hair, forming an indistinct pubescence.

5. *A. aereus*, elongatus, nigro-piceus, ænescens, cinereo-pubescent, fronte paulo concava, thorace subtilius punctato, densius et subtilius versus latera, latitudine longiore, angulis posticis subdivaricatis, elytris striis punctatis, interstitiis subconvexis, punctatis, pedibus rufis vel piceis, antennis nigropiceis, articulo 3^{io} modice dilatato. Long. .43—.45.

Athous æreus Melsheimer, Proc. Acad. Nat. Sc. 2, 156. (♀)

Athous æneolus Melsheimer, Proc. Acad. Nat. Sc. 2, 156. (♂)

Middle and Southern States. The male resembles very much in appearance *Corymbites appressifrons*: the sides of the thorax are very slightly rounded, and the third joint of the antennæ, though narrower, is as long as the fourth. The female has the thorax narrowed and rounded before the middle, and the third joint of the antennæ about two-thirds

the length of the fourth. The front is slightly concave as in all the preceding species, a character which with the finer and denser punctuation of the thorax and prosternum, will readily distinguish this from the next species. The legs seem subject to variation in colour: sometimes they are bright testaceous yellow, and sometimes very dark piceous. A typical specimen of *Athous æneolus* furnished me by Dr. Melsheimer is a male of the variety with dark legs.

6. *A. decoloratus*, piceo-niger, elongatus, cinereo-pubescent, fronte plana, non concava, thorace convexiusculo, latitudine longiore, subtiliter punctato, angulis posticis subdivergentibus, elytris (sæpe testaceis) striis profundis vix punctatis, interstitiis subconvexis, parce subtiliter punctulatis, antennis (basi sæpe rufis) articulo 3^{io} vix dilatato, 4^{to} paulo brevior, pedibus vel testaceis vel nigris. Long. .35—.5.

Elater decoloratus Say, Trans. Am. Phil. Soc. 6, 180.

Middle, Eastern, and Western States. Distinguished from the preceding by the punctuation of the thorax being more distinct, the thorax itself less convex, and the front not concave, although marked with two faint impressions; the third joint of the antennæ appears less dilated: in the male it is as long as the fourth; in the female somewhat shorter; the sides of the thorax are almost straight in the male, while in the female they are rounded before the middle. Among the specimens in my collection are three well marked types, which, however, are not sufficiently distinct to stand as species:

- α. Corpus nigrum, elytris testaceis, pedibus testaceis, vel fusco-testaceis. (*El. dec.* Say.)
- β. Corpus nigrum, pedibus, annisque basi flavo-testaceis. (*El. xanthopus* † Harris.)
- γ. Corpus nigrum, annis pedibusque nigro-piceis.

Of the first variety, the base of the antennæ is sometimes almost testaceous; of variety (β) I have seen only females, and of (γ) only males.

7. *A. indistinctus*, piceo-niger, elongatus cinereo-pubescent, fronte concava, thorace latitudine longiore, subtiliter, medio fere obsolete punctato, angulis posticis subdivergentibus, elytris striis punctatis, interstitiis fere planis, subtiliter parce punctulatis, pedibus testaceis, annis articulo 3^{io} non dilatato (feminae 2^{ndo} vix longiore.) Long. .45.

One specimen, Georgia, with the thorax moderately convex, and the sides rounded before the middle. Easily distinguished from any of the varieties of the two preceding species, by the finer and more distant punctures of the thorax, and the more concave front.

B. *Thorax fissuris basalibus nullis, angulis posticis non carinatis.*

8. *A. melanophthalmus*, castaneus, vel rufo-piceus, helvo-pubescent, thorace confertim punctato, latitudine longiore, ante basin paulo latiore, angulis posticis parvis acutis, obsolete canaliculato, elytris striis antice punctatis, interstitiis planis minus dense punctatis, pedibus pallidioribus, antennarum articulo ultimo constricto. Long. .6—.7.

Athous melanophthalmus Melsheimer, Proc. Acad. Nat. Sc. 2, 154.

Middle States, rare; as in the other species of this division, the front is slightly concave. This and the following species are so closely related, that it is very difficult to point out sufficient characters to distinguish them; the differences in the shape of the thorax in the sexes of the same species, also complicate the subject, as the precise sexual

relations are not known in all the species. I have endeavoured to point out such distinctive characters as appear to be independent of sex, but am very doubtful about the correctness of the results; although the differences of the posterior thoracic angles, the striæ of the elytra, and the constriction of the last joint of the antennæ are very considerable, yet until the sexual relations are fully understood, no great confidence can be felt in such characters, where the external appearance is so uniform.

This supposed species has the posterior angles of the thorax very small, not at all divergent, and acute; the sides of the thorax are broadly rounded, more so in (the female?) one sex than in the other; the last joint of the antennæ is strongly constricted and acuminate. The colour varies from dark reddish brown to castaneous; the pectus is sometimes darker than the abdomen; the feet are paler.

9. *A. tener*, valde elongatus, rufo-castaneus, helvo-pubescent, thorace elongato, antrorsum subangustato, lateribus rectis, confertim punctato, minus convexo, angulis posticis acutis, paulo productis, non divergentibus, elytris striis antice subtiliter punctatis, interstitiis fere planis, punctatis, antennis articulo ultimo non constricto. Long. .60.

One specimen, New York; possibly the true male of the preceding; the angles of the thorax, though longer are still acute; the sides are straight, except at the very apex, where they are slightly rounded; the dorsal line is visible only at the base; the antennæ are scarcely longer than in the preceding, but their last joint is not constricted. It has the general appearance of *Corymbites pyrrhos*, but the thorax is less elongate, and the posterior angles less produced.

10. *A. consentaneus*, fusco-piceus, helvo-pubescent, thorace latitudine longiore, ante basin non latiore, lateribus ante medium late rotundatis, angulis posticis paulo productis, apice rotundatis, confertim punctato, postice subcanaliculato, elytris striis antice profundius punctatis, interstitiis paulo convexis, punctatis, pedibus antennisque ferrugineis, vel piceis, his articulo ultimo constricto. Long. .65.

One specimen from New York, having reddish feet and antennæ, and another from Michigan with the same parts dark brown. This species seems different on account of the longer and more obtuse thoracic angles, which prevent it from being associated with either of the two preceding; the thoracic angles do not diverge at all, in which respect it differs from the next, but may, nevertheless, be the male of it. The thorax is as densely punctured as in *A. melanophthalmus*.

11. *A. bilobatus*, nigro-piceus, helvo-pubescent, thorace latitudine longiore, convexiusculo, medio parcius, lateribus sat dense punctato, lateribus vix late rotundatis, angulis posticis paulo productis, divergentibus apice rotundatis, elytris striis antice profunde punctatis, interstitiis paulo convexis punctatis, pedibus ferrugineis, antennis fuscis, articulo ultimo constricto. Long. .60.

Elater bilobatus Say, Trans. Am. Phil. Soc. 6, 174.

One specimen, Wisconsin, Dr. Hoy. Say describes the antennæ as of the same colour as the legs, but we see from the preceding species that this is not a constant character. This one differs by its more convex and less densely punctured thorax, and the more divergent and more rounded angles; the sides of the thorax are very slightly rounded, and are a little sinuous near the posterior angles. From all the others, except the preceding, this is known by the more deeply punctured striæ of the elytra.

12. *A. planatus*, piceus, helvo-pubescent, thorace latitudine longiore, lateribus antice late rotundatis, confertim punctato, angulis posticis paulo productis, non divergentibus, apice rotundatis, elytris striis profundis, antice paulo punctatis, interstitiis omnino planis parce punctulatis, subtus rufo-piceus, pedibus pallidioribus, antennis articulo ultimo non constricto. Long. .60.

One specimen, New Jersey, Mr. Guex. This species precisely resembles in form *A. consentaneus*, and only differs by the angles of the thorax being still more rounded, and the striæ of the elytra being less punctured, with entirely flat interstices; the last joint of the antennæ does not appear constricted.

13. *A. cavifrons*, rufo-testaceus, paulo pubescens, thorace latitudine longiore, lateribus parallelis, antice vix rotundatis, confertim punctato, angulis posticis modice productis, acutis, elytris striis punctatis, interstitiis paulo convexis parce subtiliter punctatis, antennis articulo ultimo constricto. Long. .5.

Athous cavifrons Melsheimer, Proc. Acad. Nat. Sc. 2, 154.

Pennsylvania and Georgia. The thorax of the female is a little more convex than that of the male, and the sides converge a little in front. The clypeus is not more concave than in the other species of this division, from all of which it is easily distinguished by its smaller size and less densely pubescent body, as well as by its brighter colour.

CRIGMUS Lec.

Frons parum convexa, antice depressa, non marginata, margine laterali obliqua, ad apicem extensa: fossulæ antennales distantes, bene definitæ: labrum antice rotundatum, mandibulæ apice acutæ, edentatæ: antennæ valde serratæ, articulo 1^{mo} mediocri subconico, 2 et 3 parvis, æqualibus, 4—10 æqualibus triangularibus, 11^{mo} valde constricto, fere diviso: palpi articulo ultimo triangulari, acuto: prosternum antice lobatum, postice mucronatum, mucrone non inflexo, sutura oblique concava, antice non excavata: mesosternum non protuberans: coxæ posticæ intus fere sensim paulo dilatatæ, dente interno magno acuto: tarsi filiformes pubescentes, articulo 1^{mo} sequentibus duobus coniunctis æquali, 2—4 sensim brevioribus, 5^{to} præcedentibus 2 æquali, unguiculis integris.

I have formed this genus upon *Aphanobius hepaticus* Germ., which appears sufficiently distinct from the type of the genus, *A. infuscatus*, on account of the declivous mesosternum, and shorter first joint of the antennæ. The tooth at the internal part of the posterior coxæ is stronger and more acute, while the posterior margin of the plate is not undulated, as in *A. infuscatus*, but regularly and very slightly curved; the pubescence of the tarsi is uniform, without any tendency to form brushes as in *A. infuscatus*. The external resemblance (barring size) is very great, but we have frequent examples in this family of close external resemblance among species of most widely distinct genera. With regard to the weight of the character derived from the mesosternum, that will become evident, I think, to any one who will observe the constancy of the protuberant form, through a large group of species, which carry in their appearance the evidence of the distinctness of their type. Adopting such a principle of division, *Aphanobius infuscatus* will then form the osculant of the group with protuberant mesosternum with the present genus.

1. *C. hepaticus*, obscure castaneus, dense longius helvo-pubescent, thorace latitudine longiore confertim punctato, subcylindrico, lateribus antice paulo rotundatis, elytris fastigiatis, apice muticis, striis punctatis interstitiis confertim punctatis et rugosis, pedibus antennisque rufis. Long. .6—74.

Elatér hepaticus Germar, Ins. Nov. 43.

Aphanobius hepaticus Germar, Zeitschr. 5, 184.

Georgia and Texas; South America, according to Germar. The posterior angles of the thorax are long, acute, and carinated; there are no basal fissures.

2. *C. texanus*, obscure castaneus, dense longius helvo-pubescent, thorace confertim punctato, antrorsum angustato, latitudine non longiore, lateribus rectis antice rotundatis, elytris fastigiatis, muticis, striis punctatis, interstitiis confertim punctatis et rugosis, pedibus rufescentibus. Long. .7.

Two specimens collected by Mr. Schott, of the Mexican Boundary Commission, at Eagle Pass, on the lower Rio Grande. Only differs from the preceding by the thorax being shorter and distinctly narrowed anteriorly.

ATRACTOPTERUS *Lec.*

Frons modice convexa, lateribus oblique marginatis, margine fere ad apicem extendente, fossulis antennarum bene definitis distantibus: labrum submarginatum: mandibulæ versus apicem dentatæ, apice acutæ: antennæ serratæ, articulo 1^{mo} breviusculo, 2 et 3 subcylindricis, illo brevior, 4—10 triangularibus, 11^{mo} apice subacuminato: palpi articulo ultimo parum dilatato apice rotundato: prosternum antice breviter lobatum, mucrone postico vix inflexo, sutura laterali non excavata, oblique concava: mesosternum non protuberans: coxæ posticæ laminis angustis, intus parum dilatatis, dente interno minusculo acuto: tarsi æqualiter pubescentes, filiformes, articulo 1^{mo} vix longiore, 2—4 sensim paulo brevioribus, 5^{to} præcedentibus 3 æquali unguiculis maiusculis integris.

Differs from *Crigmus* by its convex front, and less elongate first tarsal joint; from *Ludius* by the narrower, less dilated, and less dentate coxal laminæ. The form of body is narrow and fusiform, being narrowed each way from the base of the elytra, which are acute at the tip; the posterior angles of the thorax are acute, and carinated; there are no basal fissures.

1. *A. fusiformis*, nigro-viridis, cinereo-pubescent, thorace punctato, latitudine longiore, antrorsum angustato, lateribus rectis, angulis posticis elongatis, sæpe testaceis, elytris piceo-testaceis, striatis, interstitiis paulo convexis sat dense punctatis, apice subacutis, pedibus testaceis, antennarum articulo 1^{mo} rufo. Long. .55.

Lake Superior, not rare. It is the *Pristilophus fusiformis* of my catalogue in Agassiz' Lake Superior.

2. *A. viridanus*, ferrugineus, supra piceo-æneus, tenuiter cinereo-pubescent, thorace latitudine longiore, subcylindrico, lateribus rectis, ad apicem rotundatis, parce punctato, margine omni ferrugineo, pone medium canaliculato, ante medium utrinque fovea profunda impresso, elytris striis punctatis vix impressis, interstitiis planis, parce punctulatis, antennis nigris basi rufis. Long. .35.

Elater viridanus Say, Ann. Lyc. 1, 250.

Elater sublucens Randall, Bost. Journ. Nat. Hist. 2, 37.

Pennsylvania, Dr. Melsheimer. A small species, looking like a *Dolopius*, and very remarkable by the two deep foveæ before the middle of the thorax; the form is less cuncate than that of the preceding species; the thorax is almost parallel on the sides, and the elytra slightly rounded in their outline. The vertex is marked with a longitudinal fovea, as in *Dolopius*, from which, however, it differs essentially by its less convex front, and shorter basal joint of the antenna.

3. *A. incongruus*, tenuiter cinereo-pubescent, capite thoraceque olivaceis, opacis, confertim punctatis, thorace latitudine longiore, lateribus postice parallelis ante medium late rotundatis, sæpe

rufo-bivittato, elytris testaceis, striis tenuibus vix punctulatis, interstitiis planis, dense scabro-punctatis, abdomine, prosterni lobo, thoracis parte inflexa, antennarum articulo 1^{mo}, pedibusque testaceis Long. .28—.37.

Lake Superior: one specimen with the thorax blackish green, and two with a broad discoidal reddish yellow vitta each side. This species is less slender than *A. viridanus*, and the thorax is more broadly rounded anteriorly, so that it appears less cylindrical. The postpectus is black.

A specimen found with those just mentioned has the thorax entirely greenish black, above and beneath, with the sides much more straight, converging slightly and rounded only near the apex; the disc is punctured as in this species, but has two anterior foveæ as in *A. viridanus*; the abdomen, like the pectus, is black, and does not show any reddish tinge. This may be a distinct species, but until the sexual differences are better understood, I think it better to permit it to remain under *A. incongruus*.

LUDIUS Latr.

1. *L. abruptus*, niger, dense punctatus, fusco-subsericeus, tarsis piceis; elytris postice obsolete striatis, ad apicem non acuminatis. Long. .8.

Elatér abruptus Say, Ann. Lyc. 1, 253; Trans. Phil. Soc. 6, 166.

Ludius coracinus Germ. Zeitschr. 4, 47.

Middle, Southern, and Western States; rare.

2. *L. attenuatus*, obscure piceo-sanguineus, dense punctatus, fusco-subsericeus, elytris versus apicem, antennis, pedibusque nigris, elytris postice vix obsolete striatis apice acuminatis. Long. .9.

Elatér attenuatus Say, Ann. Lyc. 1, 257; Trans. Am. Phil. Soc. 6, 166.

Middle, Southern, and Western States; more abundant than the preceding.

DOLOPIUS Esch.

Latreille and Germar have already asserted that the genera *Dolopius*, *Agriotes*, and *Ectinus*, of Eschscholtz, were separated on evanescent characters; and after patiently examining our native species I have adopted their opinion. Differences of organic character, although too slight for generic distinction, are readily found, and enable us to facilitate the determination of the species, which may be grouped as follows:

- | | | | | |
|--|---|---|---|------------|
| A. Mandibulæ perpendiculariter dilatatæ, apice emarginatæ | - | - | - | Sp. 1. |
| B. Mandibulæ apice compressæ, non dilatatæ: | | | | |
| 1. Antennæ articulis 2 et 3, 4 ^{to} coniunctis æqualibus | - | - | - | Sp. 2—3. |
| 2. Antennæ articulis 2 et 3, 4 ^{to} singulis vix brevioribus. | | | | |
| * Laminæ coxarum intus vix latiores, (thoracis margine plus minus obsoleto:) | - | - | - | Sp. 4—9. |
| ** Laminæ coxarum intus subito paulo dilatatæ, (thoracis margine integro:) | - | - | - | Sp. 10—13. |

A.

1. *D. mancus*, crassiusculus, ater, vel piceus, pubescens, capite thoraceque confertim sat grosse

punctatis, hoc latitudine vix brevior, lateribus parallelis antice rotundatis, angulis posticis subdivergentibus, elytris striis profundis punctatis, interstitiis planiusculis, rugose punctatis, antennis pedibusque rufis. Long. .3—·35.

Elater mancus Say, Journ. Acad. Nat. Sc. 3, 171; Trans. Am. Phil. Soc. 6, 168.

? *Elater obesus* Say, Journ. Acad. Nat. Sc. 3, 168; Trans. Am. Phil. Soc. 6, 168.

Elater (Agriotes) obesus † Harris, Ins. Massachusetts, Injurious to Vegetation, 2d ed. p. 49.

Agriotes truncatus Melsheimer, Proc. Acad. Nat. Sc. 2, 217.

Agriotes striatulus Melsheimer, Proc. Acad. Nat. Sc. 2, 217.

Lake Superior and throughout the Atlantic portion of the United States. A specimen was communicated to me by Dr. Harris as *Elater obesus* Say: the remarks under that species in the Transactions of this Society are as follows: "The clypeus is not prominent and the thoracic spines are not carinated; the elytra in one specimen are acuminate at the tip: the nails are very robust on the basal half, which terminates at the middle in a prominent tooth, separated by a deep fissure." Now in the present species, as in all others arranged under this genus, the spines of the thorax are strongly carinated, and the unguis are not toothed. For these reasons I cannot adopt Dr. Harris' view regarding this species, which appears to me to agree more nearly with Say's *El. mancus*. The basal fissure of the thorax is more distinct than in the other species, in all of which it is almost wanting.

B.—1.

2. *D. oblongicollis*, valde elongatus, fusco-niger, pubescens, thorace latitudine plus sesquilingiore, lateribus parallelis, antice paulo rotundatis, confertim punctato, elytris striis punctatis, interstitiis sat dense punctatis, antennis piceis, articulis 2 et 3 conjunctis 4^{to} fere brevioribus, pedibus testaceis. Long. .31—·35.

Melsheimer, Proc. Acad. Nat. Sc. 2, 218.

Middle States, not rare. The anterior margin of the thorax is sometimes testaceous.

3. *D. isabellinus*, valde elongatus, luteo-testaceus, pubescens, capite antennisque fuscis, thorace latitudine sesquilingiore, lateribus parallelis, antice paulo rotundatis, minus subtiliter punctato, elytris striis punctatis, interstitiis sat dense punctatis, antennis articulis 2 et 3 conjunctis 4^{to} fere brevioribus. Long. .37.

Melsheimer, Proc. Acad. Nat. Sc. 2, 218.

Pennsylvania. I have seen only the typical specimen in Dr. Melsheimer's collection. It differs from the preceding only by the coarser and less dense punctuation of the thorax.

B.—2*.

4. *D. collaris*, niger, pubescens, thorace latitudine longiore, postice subcanaliculato, lateribus parallelis, antice rotundatis, confertim minus subtiliter punctato, lateribus late rufis, angulis posticis elongatis, elytris testaceis, striis subtilius punctatis, interstitiis minus dense punctulatis, antennis pedibusque rufo-testaceis. Long. .49.

Two specimens, Vermont, Prof. C. B. Adams. Size and form of the next species, and, apart from colour, only distinguished from it by the less densely punctulate elytra.

5. *D. fuscus*, ater, opacus, pubescens, thorace latitudine longiore postice subcanaliculato, lateribus parallelis, antice rotundatis, confertim minus subtiliter punctato, lateribus sæpissime late ob-

scure sanguineis, elytris striis subtilius punctatis, interstitiis confertim rugose punctulatis. Long. .43—.55.

Lake Superior and Vermont. The antennæ and legs are black, with a faint pitchy lustre: the sanguineous colour of the sides of the thorax is sometimes almost wanting; at other times it is quite bright, and extends upon the inflexed portion, and even to the anterior margin of the prosternum.

6. *D. pubescens*, ater, subnitidus, pubescens, thorace latitudine vix longiore, postice canaliculato, lateribus postice parallelis antice rotundatis, sat dense punctato, elytris striis subtiliter punctatis, interstitiis confertim rugose punctulatis, antennarum basi pedibusque fusco-testaceis. Long. .36.

Agriotes pubescens Melsheimer, Proc. Acad. Nat. Sc. 2, 217.

Pennsylvania and Lake Superior. Smaller and more robust than the preceding, and with the punctures of the thorax less dense: differs from *D. avulsus* by its larger size, shorter and more densely punctured thorax, and by its much less lustrous surface. The antennæ in one specimen are fuscous, in the other black, with the basal joints testaceous.

7. *D. avulsus*, niger, nitidus, minus dense helvo-pubescens, thorace latitudine longiore postice canaliculato, lateribus paulo obliquis, antice rotundatis, parcius grossius punctato, angulis posticis subdivergentibus, elytris striis punctatis, interstitiis vage punctulatis et rugosis, antennis pedibusque rufis. Long. .3.

Pennsylvania and Vermont. Differs from the preceding by its more brilliant colour, brownish and less dense pubescence, and by the coarser and more distant punctures of the thorax.

8. *D. sordidus*, fuscus, dense cinereo-pubescens, thorace latitudine non longiore, lateribus parallelis antice rotundatis, postice canaliculato, confertim punctato, angulis posticis non divergentibus, elytris striis punctatis, interstitiis confertim rugose punctulatis, antennis rufis pedibus flavis. Long. .3.

New York, Mr. Guex: a specimen also in Dr. Harris' collection. Resembles somewhat *D. mancus*, but is less robust; the mandibles, although obtuse, are not dilated and emarginate, as in that species: it is sufficiently distinct from all the other species of this division by its densely and more finely punctured thorax, and more dense pubescence.

9. *D. stabilis*, ater, fere opacus, pubescens, thorace latitudine longiore, lateribus subparallelis, antice rotundatis, alutaceo, ante medium confertim subtilius punctato, angulis posticis vix divergentibus, elytris sæpe piceo-testaceis, striis acutis punctatis, interstitiis planis confertissime rugose punctulatis, antennis pedibusque piceo-testaceis. Long. .33—.45.

Lake Superior, abundant. A species easily recognised, and very remarkable for the sculpture of the thorax, the surface of which is finely chagrined, with distinct punctures only in front of the middle: the head is densely punctured. By a very powerful lens, the chagrining of the thorax is seen to be produced by an infinity of very small punctures.

B.—2**.

10. *D. limosus*, ater, flavo-pubescens, clypeo truncato, thorace latitudine longiore, lateribus parallelis, ad apicem rotundatis, postice canaliculato, confertim punctato, angulis posticis rufescentibus non divaricatis, elytris testaceis, striis acutis punctatis, interstitiis confertim rugose punctulatis, antennis pedibusque rufo-testaceis. Long. .35.

Lake Superior, not rare. This species connects this with the last division of the genus: the second and third joints of the antennæ are hardly smaller than the fourth, and the laminæ of the posterior coxæ are distinctly wider internally: the tooth is, however, not so prominent as in the following species, and the clypeus is decidedly truncate at the tip, and considerably elevated above the labrum: the lateral margin of the thorax is well marked for its whole length, and is not deflexed so as to belong to the under surface, as in the preceding species.

11. *D. pauper*, ater, pubescens, clypeo truncato, thorace latitudine vix longiore, lateribus parallelis, ad apicem rotundatis, apice et angulis posticis testaceis, confertim punctato, postice canaliculato, elytris striis acutis punctulatis, interstitiis planis confertim rugose punctulatis, vitta rufo-picea a humero ad apicem plus minusve distincta, antennis fuscis, basi pedibusque rufo-testaceis. Long. .22—.29.

Abundant throughout the Atlantic parts of North America. A specimen was sent me by Dr. Harris as *Elater inquinatus* Say, which, however, being said (Trans. Am. Phil. Soc. 6, 175) to have the fourth tarsal joint lobed, and the thorax with an elongate basal fissure each side, cannot belong to this genus. From the manner in which Say distributed types of his species in Europe, I fear that he was not very careful in naming his duplicates, probably trusting to his usually excellent descriptions, for the identification of those described by him. I am inclined to believe that *E. inquinatus* Say must be referred to *Adrastus*, and that the serration of the unguis was probably overlooked.

Two specimens from Lake Superior are much larger, (.34 unc.) and have the striæ of the elytra less distinctly marked. They do not seem, however, to constitute a separate species.

12. *D. subustus*, fusco-niger, pubescens, thorace rufo-testaceo, marginibus dilutioribus, dense punctato, latitudine vix longiore, lateribus parallelis antice vix rotundatis, elytris rufo-testaceis, basi, sutura margineque leviter infuscatis, striis punctatis interstitiis planis, confertim rugose punctatis, antennis nigro-piceis, pedibus rufis. Long. .27.

Two specimens found at San Francisco, California. Somewhat more slender than *D. pauper*, which, except in colour, it very much resembles: the lateral oblique lines of the front are indistinctly connected anteriorly, and the vertex is not marked with the usual oblong fovea.

13. *D. bigeminatus*, subcylindricus, ater, pubescens, thorace latitudine fere sesqui longiore lateribus parallelis, antice vix rotundatis, confertim punctato, elytris macula utrinque elongata pone basin, alteraque pone medium rotundata, læte rufo-testaceis, striis punctatis, interstitiis sat dense rugose punctatis, pedibus testaceis, antennis vel fuscis vel testaceis. Long. .21.

Elater bigeminatus Randall, Bost. Journ. Nat. Hist. 2, 37.

Lake Superior, Massachusetts and Pennsylvania, rare. This species has the commissure of the oblique frontal lines quite distinct, as in *Adrastus*, but the unguis are absolutely without teeth: the vertex, as in the preceding species, is not foveate.

ADRASTUS Esch.

The species below mentioned have the third and fourth joints of the tarsi slightly lobed

beneath, and all belong to Erichson's first division. Their appearance is altogether that of *Dolopius*, except that the elytra are slightly cuneate, and the front is distinctly angulated: the angles of the thorax are not carinated, and the basal fissures are long.

1. *A. recticollis*, piceus, pubescens, thorace lateribus dilutioribus, antice paulo rotundatis, minus dense punctato, angulis posticis subdivergentibus, elytris testaceis sutura infuscata, striis profundis punctatis, interstitiis parce punctatis, antennis pedibusque rufo-testaceis. Long. .2.

Elater recticollis Say, Journ. Acad. Nat. Sc. 3, 168: (*inseius*) Trans. Am. Phil. Soc. 6, 184.

Adrastus pumilus Erichson, Germ. Zeitschr. 3, 120.

Middle States, not common. The difference between this and the following, except in colour, is not obvious: the sides of the thorax, however, appear to be less suddenly rounded in front, and the disc is more convex: the posterior angles appear more elongated and divergent.

2. *A. testaceus*, rufo-testaceus, pubescens, thorace minus dense punctato, lateribus rectis, antice breviter paulo rotundatis, angulis posticis non divergentibus, elytris striis profundis punctatis, interstitiis parce punctatis. Long. .18.

Melsheimer, Proc. Acad. Nat. Sc. 2, 219.

Pennsylvania and Georgia. The sides of the thorax are entirely straight, except immediately at the apex, where they are rounded.

Two specimens from the Southern States agree in form with this species, but are of a fuscous colour, with the antennæ and feet testaceous; they can scarcely be separated.

To this genus must belong *Elater quietus* Say, (Trans. Am. Phil. Soc. 6, 184:) a black species with yellow antennæ and feet, and having the apex of the clypeus more obtuse than in *A. recticollis*. It is .2 unc. long, and was found in Indiana.

Here, probably, must be placed *Elater inquitatus* Say, (ibid. 175:) but the serration of the unguis is not mentioned: vide remarks under *Dolopius pauper*.

ANCHASTUS *Lec.*

Frons convexa, antice subangulatim marginata: mandibulæ breves, basi triangulariter extus dilatata (sicut in *Dolopio*:) labrum antice rotundatum: antennæ articulo 1^{mo} mediocri, parum serratæ, articulis 2 et 3, 4^{to} coniunctis non longioribus: prosternum lobatum, mucrone postico subinflexo, sutura laterali concava, antice excavata: mesosternum non protuberans: coxæ posticæ laminis intus valde dilatatis, margine autem postico non emarginato, dente forti interno instructo: tarsi pubescentes, articulo 1^{mo} elongato, sequentibus duobus longiore: 3^{io} subtus longe lobato, 4^{to} parvo, 5^{to} tenui unguiculis integris.

From *Dicrepidius* this genus differs by the second joint of the tarsi being simple; from *Dicrepidius*, *Elater*, and in fact from all the genera of true *Elateridæ*, described in this essay, it differs by the very great dilatation of the coxal plates internally; their posterior margin is somewhat oblique, though not sinuate as in *Dicrepidius* and *Elater*. The posterior angles of the thorax are acute, strongly carinate, and not diverging; there are no basal fissures. This genus seems related to *Physorhinus*.

1. *A. digitatus*, fusco-piceus, elongatus, helvo-pubescens, thorace latitudine longiore, antrum angustato, lateribus rectis ante medium rotundatis, angulis posticis elongatis, dense punctato,

elytris a basi subangustatis, striis punctulatis, interstitiis confertim rugose punctulatis, antennis articulis 2 et 3 subcylindricis, 4^{to} coniunctis non longioribus. Long. .43.

One specimen, Pennsylvania. The narrow arched body, narrowed at each end, with the thorax fitted closely to the elytra, give this species very much the appearance of some of the Eucnemides; the front is more convex than in the other species, and is almost angulated at the tip. The lobe of the third tarsal joint is very long, extending to the middle of the last joint; the outer margin of the plates of the posterior coxæ is oblique, and the posterior margin also a little oblique inwards, and they unite in an obtuse angle not prominent, but scarcely rounded. The thorax has a short furrow at the middle of the disc, which is possibly accidental; the carinæ of the posterior angles diverge very much from the margin.

2. *A. recedens*, latiusculus, fusco-niger, sordide pubescens, thorace latitudine fere brevior, antrosum angustato, lateribus rotundatis, subtilius punctato (punctulis paucis intermixtis,) angulis posticis modice productis acutis, elytris parallelis postice rotundatis, striis punctatis, interstitiis planis rugose punctulatis, antennis articulis 2 et 3 subcylindricis, 4^{to} coniunctis vix longioribus. Long. .2—24.

San Francisco. The smaller sized individuals appear to be more densely pubescent, and the punctures of the thorax appear more distinct;—they do not, however, seem to be specifically distinct. The sides of the thorax are more rounded anteriorly than at the base, but are not straight at any part; the carina diverges very much from the margin, as in the preceding, and the front is moderately convex and slightly angulated. The lobe of the third joint of the tarsi does not reach quite to the middle of the fifth joint.

To this genus may possibly be referred *Cryptohypnus cinereipennis* *Man.* (*Monocrepidius cinereipennis* *Esch.*) and *C. puberulus* *Man.* (*Bull. Mosc.* 1843, p. 240;) of which the fourth tarsal joint is said to be lobed. The difficulty of determining whether the lobe proceeds from the third or fourth joint is sometimes very great. At all events the species alluded to cannot be retained in *Cryptohypnus*, and a new examination is necessary to fix their true affinity.

BRACHYCREPIS *Lec.*

Frons convexa, antice vix producta, rotundatim marginata, non impressa: labrum antice rotundatum: antennæ valde serratæ, articulo 1^{mo} mediocri, 2^{do} parvo, 3^{io} sequenti æquali, 11^{mo} præcedenti non longiore, simplici: prosternum antice lobatum, mucrone postico subinflexo, sutura laterali paulo concava, antice excavata: mesosternum non protuberans, coxæ posticæ laminis intus subito quadrangulariter valde dilatatis, margine postico subsinuato, dente interno mediocri, acuto: tarsi pubescentes articulo 1^{mo} sequentibus coniunctis æquali: 2^{ndo} plus duplo brevior, subtus vix lobato, 3^{io} brevi, subtus breviter lobato, 4^{to} parvo recepto, 5^{to} 2^{ndo} æquali, unguiculis integris.

The lobe of the third joint of the tarsi does not extend beyond the fourth joint. This genus differs from *Dicrepidius* by the more sudden dilatation of the coxal plates, as well as by the structure of the tarsi; from *Anchastus*, it is readily known by the distinctness of the outer angle of the coxal plate (the posterior margin of which is not oblique inwards, but slightly emarginate,) and by the structure of the antennæ and tarsi. The posterior angles of the thorax have two acute carinæ, one parallel with the margin as in *Dicrepidius*, the other diverging as in *Anchastus*.

1. *B. bicarinatus*, elongatus, fusco-castaneus, helvo-pubescent, thorace latitudine longiore, antrorsum angustato, lateribus late rotundatis, subtilius punctato, angulis posticis acutis, bicarinatis, elytris striis punctatis, interstitiis rugose punctatis, abdomine rufescente, pedibus antennisque rufo-testaceis. Long. .31.

One specimen, Georgia. The striæ of the elytra are well impressed; it resembles in appearance a small specimen of *Dicrepidius soleatus*, but is at once known by its finely punctured thorax.

DICREPIDIUS Esch. (emend.)

Frons modice convexa, antice producta, et rotundatim marginata, sæpe ad apicem bicristata: mandibulæ emarginatæ, basi triangulariter subdilatatæ: labrum antice rotundatum: antennæ plus minus serratæ, maris nonnunquam ramosi, articulo 3^{io} 4^{to} æquali, 11^{mo} non constricto: prosternum antice breviter lobatum, mucrone postico paulo inflexo, sutura laterali antice excavata, paulo concava: mesosternum non protuberans: coxæ posticæ laminis intus subsubito modice dilatatis, postice emarginatis, dente interno forti, acuto: tarsi pubescentes, articulo 1^{mo} sequentibus 2 æquali, 2 et 3 subtus lobatis, 4^{to} parvo recepto, 5^{to} unguiculis integris, maiusculis.

I have modified the diagnosis of this genus, as given by Germar, to allow the introduction of several species, which seem to differ from the type only in the absence of the two acute perpendicular ridges which run from the margin of the front to the base of the labrum, and limit the foveæ in which the antennæ are inserted. From the two preceding genera, this differs in the form of the laminæ of the posterior coxæ, which are emarginate, or sinuate posteriorly, as in *Elater*. The posterior angles of the thorax are long and sharp, the carina is well defined and almost parallel with the margin; the basal fissures are short and distinct.

A. Frons antice bicristata.

1. *D. ramicornis*, piceo-rufus, helvo-pubescent, thorace minus subtiliter parce punctato, latitudine longiore, lateribus parallelis, antice paulo rotundatis, linea dorsali lævi vix distincta, elytris postice angustatis, striis minus impressis antice fortiter punctatis, interstitiis parce subtiliter punctulatis. Long. .55.

Germar, Zeitschr. 1, 214.

Elater ramicornis Beauv. Ins. p. 10, tab. 7, fig. 3; *ibid.* 214, tab. 9, fig. 7.

Southern States, rare; more abundant in Cuba and South America. In the male the third and following joints of the antennæ are furnished with a subapical, elongate, spatulate process; the eleventh joint extends beyond the branch of the tenth joint; in the female the joints are triangular, growing gradually narrower, with the last joint one-half longer than the tenth.

2. *D.?* *binus*, niger, helvo-pubescent, thorace latitudine longiore, antrorsum subangustato, lateribus fere rectis, antice paulo rotundatis, subtilius punctato, densius ad latera, angulis posticis acutis, carina angulari valde elongata, margini parallela, elytris striis profundis punctulatis, interstitiis confertim rugose punctatis, macula magna utrinque basali, alteraque versus apicem læte rufo-testaceis, antennis pedibusque testaceis. Long. .29.

Elater binus Say, Trans. Am. Phil. Soc. 6, 178.

One specimen, Georgia. As the tarsi and posterior coxæ of my specimen are in bad condition, I am not absolutely certain that it belongs to this genus; the two crests of the

anterior portion of the front are distinct, but more distant than in the preceding species; the antennæ are only slightly serrate, and the third joint is not as wide as the fourth; the carina of the posterior angles of the thorax reaches almost to the middle; the first joint, especially of the anterior tarsi, is longer in proportion than in the preceding species; the second joint appears to be lobed, but I am not certain that it is so; the third joint is nearly as long as the second, and extends beneath into a lobe, beyond the fourth joint, which is very small; the fifth is as long as the three preceding, with small slender nails.

Say describes the tarsi as having the penultimate joint lobed, but as the present species agrees in every other respect with his description, I think we may be justified in considering his observation as an error.

B. *Frons non cristata.*

3. *D. ferreus*, rufo-piceus, longius helvo-pilosus, fronte concava, thorace parce grossius punctato, latitudine vix longiore, antrorsum angustato, et lateribus paulo rotundato, spatio dorsali indistincto lævi, elytris postice angustatis, striis punctatis, interstitiis subconvexis parce punctatis. Long. .56.

One specimen, Texas, Lieut. Haldeman. The front is more produced than in *D. ramicornis*, and is slightly concave above; the posterior angles of the thorax are carinated, but the carina is less acute than in that species. The lobes of the tarsi extend to the middle of the last joint. The antennæ are blackish and formed exactly as in the female of *D. ramicornis*, but are a little broader. The punctures of the thorax are distant in the middle, but moderately close on the sides; there is a rounded indistinct smooth dorsal space behind the middle.

4. *D. soleatus*, supra castaneus, helvo-pilosus, fronte subconcava, thorace grossius, lateribus densius punctato, latitudine longiore, antrorsum angustato, lateribus rectis, antice paulo rotundatis, elytris subparallelis, postice rotundatis, striis punctatis, interstitiis parce punctatis, postpectore, abdomine, antennis pedibusque rufis. Long. .45.

Elater soleatus Say, Trans. Am. Phil. Soc. 6, 176.

One specimen, Michigan. This species is closely related to the preceding, but the more densely punctured thorax, and rufous antennæ, distinguish it at once; the thorax is more narrowed anteriorly, and less rounded on the sides; the posterior angles are more acutely carinated.

Say states that the second joint of the antennæ is "not more than half the length of the third;" in my specimen, as in the preceding and next species, it is only about one-third as long as the third joint.

5. *D. simplex*, piceus, helvo-pilosus, fronte vix concava, thorace minus dense punctato, postice canaliculato, antrorsum angustato, lateribus parum rotundatis, elytris striis fortius punctatis, interstitiis planis parce punctulatis, antennis rufo-piceis, pedibus testaceis. Long. .35.

One specimen, Texas, Lieut. Haldeman. From *D. ferreus* it is distinguished by its smaller size, brown antennæ, unimpressed front, and testaceous feet; from *D. soleatus* by the less densely punctured thorax, the less deep and more strongly punctured striæ of the elytra, and by the deeper colour of the under surface. The carina of the posterior angles of the thorax is as acute as in *D. soleatus*.

ELATER Linn. (*Esch. emend.*)

AMPEDUS Germ.

A.

Densely punctured, opaque species, having the first joint of the antennæ short, the second and third small and equal, the following large and triangular, and the eleventh more or less distinctly constricted: the front is convex, the margin distinct, forming anteriorly an angle, the apex of which is rounded. The lateral suture of the prosternum is not excavated anteriorly. The mandibles are acute at tip, with an obtuse tooth beyond the middle.

1. *E. Sturmii*, ater, opacus, brevissime pubescens, thorace convexo, lateribus parallelis antice rotundatis confertissime punctato, postice canaliculato, elytris parallelis versus apicem angustatis, striis profundis punctatis, interstitiis subtiliter dense scabro-punctatis, antennarum articulo ultimo distincte constricto. Long. .47—6.

Aphanobius Sturmii Germ. Zeitschr. 5, 188.

Ectinus granulosus Melsheimer, Proc. Acad. Nat. Sc. 2, 159.

Middle and Southern States, rare.

2. *E. turbulentus*, ater opacus, breviter hispide pubescens, thorace subconvexo, antrorsum subangustato, et lateribus late rotundatis, confertissime punctato, postice canaliculato, elytris gradatim angustatis turbido-luteis, pone medium confuse nigro-nebulosis, macula utrinque transversa pallidior, striis profundis punctatis, infuscatis, interstitiis subtiliter dense scabro-punctatis, antennarum articulo 11^{mo} modice constricto. Long. .58.

Two specimens found near San Diego, on a kind of grass, in June. Similar in all its characters to the preceding, but with the sides of the elytra less parallel, and the posterior angles of the thorax more diverging: the elytra are dirty yellow, with the striæ brownish: behind the middle is a large, indistinct, blackish cloud, which includes on each elytron a transverse slightly reniform yellow spot, paler than the ground colour of the elytra. In one specimen the cloudiness is seen only on the margins of this spot, which is also very indistinct.

3. *E. limbalis*, opacus, niger, breviter hispide flavo-pubescens, thorace punctatissimo elongato, antrorsum angustato, lateribus rectis, luteo, macula media margineque basali nigris, elytris striis profundis punctatis, interstitiis confertissime subtilius scabro-punctatis, sutura margineque luteis, antennis basi rufo-piceis, articulo 11^{mo} paulo constricto. Long. .34—45.

Herbst, Käfer, 10, 53; tab. 162, fig. 10: Say, Trans. Am. Phil. Soc. 6, 167.

Ampedus limbalis Germ. Zeitschr. 5, 164.

Middle, Southern, and Western States, not rare. Varies with the yellow sutural margin becoming obsolete about the middle: the thoracic spot varies in size, sometimes reaching both the tip and base of the thorax.

B.

Moderate-sized, or small species, mostly cuneate in form, with the thorax only slightly convex, and considerably narrowed in front: the anterior margin of the front (which is

convex) always distinct and angulated: the first joint of the antennæ short, the second small, the third longer and wider than the second, usually much narrower than the fourth, but varying in this respect both in species and sex: the joints 4—10 triangular, decreasing slightly in breadth, eleventh oval, not constricted. Prosternum with the lateral suture anteriorly excavated for the reception of the antennæ.

4. *E. rubricollis*, ater opacus, helvo-pubescent, capite thoraceque confertissime fere scabropunctatis, obscure sanguineis, elytris striis profundis punctatis, interstitiis convexis confertim punctatis, antennarum articulo 3^{io} præcedente duplo longiore, subtriangulari. Long. ·5—·58.

Herbst, Käfer, 10, 49, tab. 162, fig. 6, (1801;) Say, Journ. Acad. Nat. Sc. 3, 177; Harris, Trans.

Hartford Soc. Nat. Hist. 71.

Elater verticinus Beauvois, Ins. 214, tab. 9, fig. 6, (1805;) Say, Ann. Lyc. 1, 268.

Ampedus rubricollis Germ. Zeitschr. 5, 171.

Middle, Southern, and Western States; not rare in Georgia. The last joint of the antennæ is slightly sinuate or constricted beyond the middle.

5. *E. nigricollis*, ater cinereo-pubescent, thorace confertim punctato, versus latera fere scabro, elytris pallidis subcuneatis, striis profundis punctatis, interstitiis subconvexis punctulatis, pedibus testaceis, antennarum articulo 3^{io} præcedente duplo maiore triangulari. Long. ·33—·42.

Herbst, Käfer, 10, 73, tab. 164, fig. 7; Say, Journ. Acad. Nat. Sc. 3, 176.

Ampedus nigricollis Germ. Zeitschr. 5, 166.

Middle and Southern States, not rare. The base of the antennæ is indistinctly testaceous: the third joint is considerably dilated, though not as large or as broad as the fourth: the last joint of the antennæ is not at all constricted.

6. *E. linteus*, ater cinereo-pubescent, capite confertissime, thorace confertim punctato, versus latera fere scabro, elytris cuneatis pallidis, puncto humerali, sutura, apiceque nigris, striis profundis punctatis, interstitiis subconvexis parce punctatis, antennarum maris articulo 3^{io} sequenti fere æquali. Long. ·35—·42.

Say, Trans. Am. Phil. Soc. 6, 168.

Ampedus lugubris Germ. Zeitschr. 5, 165.

Middle and Southern States, and Lake Superior. The outer margin of the elytra is black. This species is subject to some variation: a specimen from Vermont has the legs testaceous, and the head less densely punctured than usual: in other specimens the head is almost scabrous: the female has the antennæ shorter, and the third joint much less dilated than the others. Germar does not cite Say's description; and although the species has long been known under the name proposed by Beauvois, I cannot find any description in his writings.

7. *E. discoideus*, ater, griseo-pubescent, capite thoraceque opacis, confertim punctatis, versus latera fere scabris, elytris cuneatis, basi margineque flavo-fulvis, striis profundis punctatis, interstitiis subconvexis rugose punctatis, antennarum maris articulo 3^{io} sequenti subæquali. Long. ·42—·38.

Fabr. Syst. El. 2, 240; Herbst, Käfer, 10, 132.

Ampedus discoideus Germ. Zeitschr. 5, 165.

Southern States, not rare. The female has the third joint of the antennæ very slightly dilated, and about twice the length of the second.

8. *E. semicinctus*, ater, subnitidus, griseo-pubescent, thorace sat dense, lateribus densius punctato, elytris cuneatis, basi fulvo-marginatis, striis profundis punctatis, interstitiis parce punctatis, antennis feminae articulo 3^{io} præcedente duplo longiore, vix dilatato. Long. .45.

Randall, Bost. Journ. Nat. Hist. 2, 10.

One specimen, New York; found in Maine according to Mr. Randall. This species is closely allied to *E. discoideus*, which it resembles in form; the thorax is longer, less suddenly narrowed anteriorly, and not wider than the elytra; the elytra are margined with orange only at the base, and the punctures of the interstices are more regular; in the male, the third joint of the antennæ is probably dilated, as in *E. discoideus*.

9. *E. læsus*, ater opacus, griseo-pubescent, thorace confertim punctato, lateribus fere scabro, elytris basi late, lateribus antice, epipleurisque sanguineis, striis profundis punctatis, interstitiis subconvexis confertim rugose punctatis, antennis articulo 3^{io} præcedente sesqui longiore (feminae) vix latiore. Long. .5.

One specimen, Georgia. Body black, with but little lustre, covered with fine grayish pubescence. Head densely punctured: antennæ not longer than the thorax, third joint one-half longer than the second, very slightly triangular; fourth and following broad, triangular; eleventh oval, not constricted. Thorax scarcely longer than wide, strongly narrowed and rounded in front, sides posteriorly subparallel, posterior angles scarcely diverging, carinate as in the other species; disc very densely punctured, anteriorly moderately convex, punctures becoming confluent at the sides: scutellum black; elytra almost parallel anteriorly, narrowed and rounded posteriorly, base broadly sanguineous, the colour extending a little posteriorly on the sides; epipleuræ sanguineous; suture dusky; striæ deep, coarsely punctured, interstices convex, tolerably densely finely punctured and rugous. Beneath entirely black.

10. *E. Sayi*, ater, fere opacus, griseo-pubescent, thorace confertim punctato, lateribus fere scabro, elytris pallidis, sutura late, margine externo fere ad basin anguste nigris, striis profundis punctatis, interstitiis subconvexis, disperse rugose punctulatis, antennarum articulo 3^{io} subtriangulari, sequenti longitudine æquali. Long. .5.

Elater oblessus (discoideus || *Fabr.* ‡) Say, Trans. Am. Phil. Soc. 6, 165.

Middle States, rare. The broad black stripe along the suture gradually narrows near the scutellum: the exterior black margin reaches from the apex to the posterior part of the epipleuræ, where it ceases: the third joint of the antennæ is considerably narrower than the fourth, in both sexes; the eleventh joint is slightly constricted.

I have changed the name proposed by Say, not for its uncouthness, but because it does not properly belong to this species, and was intended as a substitute for a name given by Fabricius, which was supposed to be preoccupied: the reference, therefore, of the present species to that described by Fabricius, being, as already observed by Dr. Harris, an error, the name intended as a substitute fails, at least for this species. As the description, however, shows that this insect was known to Say, I have taken occasion to commemorate it with his name.

11. *E. vitiosus*, ater, subopacus, helvo-pubescent, thorace confertissime punctato, lateribus fere scabro, elytris sordide pallidis nimbo apicali atro, striis profundis punctatis, interstitiis disperse punctatis, antennarum articulo 3^{io} (maris) triangulari sequente multo minore. Long. .48.

One specimen, Vermont, Prof. Adams. Body black, with very little lustre, covered with brownish hair. Head very densely punctured; antennæ with the third joint triangular, about twice as long as the second, but not more than half the size of the fourth: last joint not constricted. Thorax not longer than wide, narrowed gradually from the base, and broadly rounded on the sides, moderately convex, very densely punctured, punctures becoming confluent towards the sides: posterior angles less elongate than usual, elytra slightly narrowed from the very base, more strongly narrowed posteriorly, pale dirty yellow, with a large apical black blotch, the anterior limits of which are badly defined, and which extends farther along the side than on the suture: striæ deep, strongly punctured, interstices convex, moderately and finely punctured.

This species differs from the following not only by the apical blotch of the elytra extending to the apex and side, but by its more densely punctured thorax, with shorter posterior angles, and by the less parallel elytra: the last is probably a sexual character.

12. *E. apicatus*, niger, helvo-pubescent, thorace confertim punctato, elytris læte sanguineis, plaga utrinque apicali oblonga nigra, striis profundis punctatis, interstitiis convexis, disperse punctatis, antennis piceis (feminæ) articulo 3^{io} secundo fere duplo longiore. Long. .35—.46.

Say, Trans. Am. Phil. Soc. 6, 170.

Ampedus melanopygus Germ. Zeitschr. 5, 161.

Northern portions of the United States. I have only females of this species, but from the relation which the joints bear to each other, the male probably has antennæ like the preceding species; the apical black spot of the elytra is well defined, and does not touch either the side or suture.

13. *E. phœnicopterus*, niger, helvo-pubescent, thorace confertim punctato, elytris sanguineo-ferrugineis, striis punctatis, interstitiis fere planis ruguloso-punctatis, antennis vix piceis, (feminæ) articulo 3^{io} secundo fere duplo longiore. Long. .43—.5.

Ampedus phœnicopterus Germ. Zeitschr. 5, 161.

Oregon and Lake Superior. Having compared specimens, I have been convinced of their identity. This species is very closely allied to the last, but the colour of the elytra is more obscure, and without spots: the thorax is more convex and more rounded on the sides: the difference in the depth of the elytral striæ and the punctuation of the interstices is not as obvious as would appear in Germar's description: I find that there is some variation in this respect in different specimens, though the interstices are never as convex as in the preceding.

14. *E. luctuosus*, ater, griseo-pubescent, thorace confertim punctato, postice canaliculato, elytris striis profundis punctatis, interstitiis confertim rugose punctulatis, antennis articulo 3^{io} secundo vix longiore, pedibusque piceis. Long. .43—.5.

Lake Superior, at Eagle Harbour. This species is extremely similar to the next, but the third joint of the antennæ in both sexes is much shorter than the fourth and hardly longer than the second. The elytra are less tapering, being almost parallel anteriorly, as in the preceding two species. The thorax is narrowed from the base, and moderately rounded on the sides: in the female it is a little broader than long, in the male its diameters are about equal.

15. *E. soccer*, ater, griseo-pubescent, thorace confertim punctato, postice subcanaliculato, elytris striis profundis punctatis, interstitiis subconvexis confertim punctatis, antennis nigris articulo 3^{io} secundo fere duplo longiore, pedibus piceis. Long. .52.

One specimen, Pennsylvania. The thorax is longer than wide, very slightly narrowed and not rounded from the base to the middle, then narrowed and broadly rounded to the tip: the elytra are slightly narrowed from the very base; the punctures of the interstices are close and distinct. Differs from the preceding by the third joint of the antennæ being longer than the second, and by the form of the thorax: from the next by the much shorter pubescence and also by the form of the thorax.

16. *E. impolitus*, ater, longius helvo-pubescent, thorace breviusculo, confertim punctato, postice canaliculato, elytris striis profundis punctatis, interstitiis confertim rugose punctatis, antennis nigris, basi testaceis, articulo 3^{io} secundo fere duplo longiore, pedibus ferrugineis. Long. .47.

Melsheimer, Proc. Acad. Nat. Sc. 2, 180.

Pennsylvania, rare. The thorax is a little wider than long, narrowed and rounded from the very base; the punctuation is a little finer, and the pubescence considerably longer than in the preceding species. The elytra are slightly narrowed from the very base. The legs are rufo-testaceous, or ferruginous.

17. *E. hepaticus*, piceo-ater, helvo-pubescent, thorace breviusculo, confertim punctato, elytris striis minus profundis punctatis, interstitiis planiusculis subtilius rugose punctatis, antennis pedibusque fusco-testaceis articulo 3^{io} secundo fere duplo longiore. Long. .45.

Melsheimer, Proc. Acad. Nat. Sc. 2, 160.

Pennsylvania and Vermont. The antennæ are more slender than in the neighbouring species; the thorax is considerably rounded on the sides, but the narrowing is scarcely perceptible from the base to the middle; it is less convex than usual and not at all channelled posteriorly; the posterior angles in Dr. Melsheimer's type continue the line of the sides, while in my specimen they are slightly divergent. The elytra are parallel to the middle, very slightly narrower than the thorax; the striæ are not deep, the interstices are not convex, finely and not densely rugosely punctured.

18. *E. molestus*, ater, helvo-pubescent, thorace oblongo antice angustato, confertim punctato, postice subcanaliculato, elytris antice parallelis, apice obtusiusculis, striis punctatis, interstitiis confertim rugose punctatis, antennis basi testaceis, articulis 2 et 3 subæqualibus, pedibus testaceo-piceis. Long. .35.

A specimen found at Lake Superior; another with paler legs brought from Maine by Prof. Guyot. The thorax is a little longer than wide, narrowed and rounded before the middle, with the sides parallel posteriorly. The elytra are parallel as far as the middle, then obtusely rounded to the apex; the striæ are narrow and well defined; the interstices are not convex; the antennæ are strongly serrate, the third joint hardly longer than the second; the eleventh joint oval.

19. *E. fuscatus*, ater, helvo-pubescent, thorace oblongo, antice angustato, punctato, elytris a basi subangustatis, striis punctatis, interstitiis rugose punctatis, antennis basi testaceis, articulis 2 et 3 subæqualibus, pedibus rufis. Long. .3—37.

Melsheimer, Proc. Acad. Nat. Sc. 2, 213.

Middle States. Differs from the preceding in the thorax not being channelled behind, and in the punctuation becoming finer near the base; also in the elytra being slightly narrowed from the base, and less obtuse at the apex, and in the interstices being less densely punctured. The antennæ are a little shorter than the thorax and strongly serrate.

20. *E. nigricans*, ater, helvo-pubescens, thorace punctato, postice canaliculato, elytris acutiusculis, striis punctatis, interstitiis remote rugose punctatis, antennis piceis articulis 2 et 3 subæqualibus, pedibus ferrugineis. Long. ·31.

Ampedus nigricans Germ. Zeitschr. 5, 176.

Elater testaceipes Mels. Proc. Acad. Nat. Sc. 2, 213.

Pennsylvania and New York. Differs from *E. molestus* by its less obtuse elytra, and from *E. fuscatus* by the punctuation of the thorax not being fine at the base, and by the dorsal channel being distinct posteriorly. In the specimens seen, the thorax is narrowed anteriorly from the middle, and is a little longer than wide; Germar describes the thorax as being "latitudine baseos subbreuior;" but this difference may be sexual.

21. *E. ursulus*, ater, nigro-pubescens, thorace punctato, postice subcanaliculato, elytris postice obtusioribus, striis punctatis, interstitiis rugose punctatis, antennis articulo 3^{io} secundo paulo longiore, pedibus rufo-piceis, vel nigro-piceis. Long. ·31.

Melsheimer, Proc. Acad. Nat. Sc. 2, 213.

Pennsylvania and New York. This species is readily distinguished from the preceding closely allied species by its pubescence being finer, and so dark coloured as to be almost invisible, unless viewed laterally; the thorax is a little longer than wide, and is narrowed almost from the base and rounded on the sides.

This species seems subject to variations: in the type the interstices of the elytra are sparsely punctured, and the feet dark rufo-piceous; in two other specimens the feet are black, and the elytra more densely rugous. I should have considered the type as *Ampedus pedalis* Germ. (Zeitschr. 5, 176,) but the thorax is not densely punctured, as required by his description.

22. *E. lacustris*, ater, griseo-pubescens, thorace punctato, antrorsum angustato, elytris basi late ferrugineis, striis punctatis, interstitiis subconvexis, disperse punctatis, antennis pedibusque testaceis, illis articulis 2 et 3 subæqualibus. Long. ·22.

One specimen, Lake Superior. The thorax is narrowed from the middle to the apex, and broadly rounded on the sides; it is scarcely longer than wide, the elytra are parallel anteriorly, obtusely rounded posteriorly; the antennæ are not longer than the thorax, which character would distinguish it from *Ampedus pullus* Germ. (Zeitschr. 5, 162.)

23. *E. fuscus*, ater, helvo-pubescens, thorace punctato, ante medium angustato, angulis posticis testaceis, elytris subtilius striatis, striis punctatis, interstitiis planis confertim punctatis, testaceis, sutura late infuscata, antennis pedibusque testaceo-fuscis, illis articulis 2 et 3 æqualibus. Long. ·26.

Lake Superior, two specimens. The thorax is not longer than wide, and tolerably strongly rounded on the sides, which are parallel behind the middle. The elytra are parallel on the sides, and gradually somewhat obtusely rounded at the tip. The antennæ are as long as the thorax.

24. *E. deletus*, ater, nitidus, griseo-pubescens, thorace antrorsum angustato, subtiliter parce punctulato, elytris subtilius striatis, striis punctatis, interstitiis planis, punctatis, antennis pedibusque fusco-testaceis, illis articulis 2 et 3 æqualibus. Long. .25.

Variat, elytris testaceo-fuscis.

Lake Superior. Though the thorax is narrowed almost from the base, and is less rounded on the sides than in the preceding, the chief character for distinguishing them is found in the punctuation of the thorax, which is here much finer and more distant; the pubescence instead of being brown is dark gray, appearing almost black in certain lights. The form and sculpture of the elytra are as in *E. fuscus*.

One specimen from Eagle Harbour, Lake Superior, is absolutely the same in form as those above described; but the striæ of the elytra are deep and strongly punctured, and the antennæ and feet are yellowish testaceous. In the absence of other specimens, I cannot decide if it should rank as a distinct species.

25. *E. mixtus*, piceo-niger, helvo-pubescens, thorace a medio antrorsum angustato, punctato, elytris parallelis, testaceo-rufis, pone medium gradatim nigricantibus, striis subtilibus punctatis, interstitiis planis rugose punctatis, antennis pedibusque piceis, illis articulo 3^{io} 2^{ndo} sesqui longiore. Long. .32.

Herbst, Käfer, 10, 54, tab. 164, fig. 9.

One specimen, Lake Superior. The antennæ are moderately long: the third joint, although not much more than half the size of the fourth, is larger than the second joint: the thorax is not longer than wide, is obliquely narrowed anteriorly, and but slightly rounded: the elytra are parallel anteriorly, and obtusely rounded posteriorly: the tarsi are testaceous.

26. *E. miniipennis*, niger, helvo-pubescens, thorace a medio antrorsum angustato, punctato, elytris parallelis, miniatis, striis profundis punctatis, interstitiis convexis, vix parce punctulatis, pedibus piceo-testaceis, antennis piceis, basi testaceis, articulis 2 et 3 æqualibus 4^{to} coniunctis longioribus. Long. .25—.3.

Georgia, Maryland, and Lake Superior. In appearance resembles *E. sanguinipennis*, but is essentially different by the parallel obtuse elytra, and the light-coloured feet. The colour of the elytra is hardly as brilliant as in the next species.

27. *E. sanguinipennis*, niger, nitidus, helvo-pubescens, thorace remotius punctato, antrorsum angustato, elytris a basi postice angustatis, læte coccineis, striis profundis punctatis, interstitiis convexis parce punctulatis, tarsis testaceis, antennis nigris basi subtestaceis, articulis 2 et 3 subæqualibus, 4^{to} coniunctis vix longioribus. Long. .33.

Say, Journ. Acad. Nat. Sc. 3, 177; Trans. Am. Phil. Soc. 6, 173.

Ampedus sanguinipennis Germ. Zeitschr. 5, 160.

One specimen, Georgia; found also in the middle States.

28. *E. palans*, ater, nitidus, griseo-pubescens, thorace latitudine longiore, antrorsum angustato, læte sanguineo, remote subtilius punctato, postice subcanaliculato, angulis posticis prosternoque nigris, elytris striis profundis, punctatis, interstitiis convexis parce rugose punctatis, antennis articulo 3^{io} paulo dilatato, 4^{to} longitudine æquali. Long. .26.

One specimen, Georgia. Care must be taken that this species is not confounded with the next, to which it bears an astonishing resemblance. On comparison, the thorax is different in form, being but little rounded on the sides: the punctuation is less dense, and

the disc is distinctly channelled posteriorly: the elytra are very slightly narrowed from the base: the third joint of the antennæ is very different in form, being as long as the fourth, though but slightly dilated.

29. *E. collaris*, ater, nitidus, brunneo-pubescent, thorace sanguineo, latitudine non longiore, a medio antrorsum angustato, sat dense punctato, postice obsolete canaliculato, prosterno nigro, elytris parallelis, griseo-pubescentibus, striis profundis punctatis, interstitiis subconvexis disperse punctatis, antennis articulis 2 et 3 subæqualibus, 4^{to} coniunctis longioribus. Long. .33.

Say, Annals of the Lyceum of Nat. Hist. New York, 1, 268.

Elatér thoracicus ‡ Herbst, Käfer, 10, 51, tab. 162, fig. 8.

Ampedus collaris Germ. Zeitschr. 5, 172.

Middle and Southern States. Herbst seems to have confounded this species with a European *Elatér thoracicus* Fabr. which is now placed in *Cardiophorus*. There are some naturalists who, finding that the species of the two authors fall into different genera, would retain both; a piece of deference to ancient authorities which can be shown only at the expense of good scientific morals, since it opens the way to carelessness. The only method of preserving nomenclature from even greater confusion than that in which it is already plunged, is to exclude decidedly, and without hesitation, every name founded upon error or misinterpretation of preceding authors. Dr. Harris thinks that the *E. collaris* is a species of *Cratonychus*, but as Say does not mention the serration of the ungues, it is safer to consider the present species, which agrees perfectly with his description, as really the one intended. In his remarks, (Trans. Am. Phil. Soc. 6, 174,) Say places *E. collaris* among the species with simple ungues, and it is hardly probable that, after his attention was turned to that character, he would have made an error in grouping the species.

30. *E. rubricus*, ater nitidus, longius helvo-pubescent, thorace a medio antrorsum angustato, nigro, basi late lateribusque sanguineo, punctato, elytris parallelis, striis profunde punctatis, interstitiis paulo convexis punctatis, pedibus piceo-testaceis, antennis basi testaceis, articulo 3^{io} 2^{ndo} paulo longiore. Long. .31—.34.

Say, Annals of Lyceum Nat. Hist. New York, 1, 261.

Middle and Eastern States. This species seems to resemble very much *Ampedus concinnus* Germ. (Zeitschr. 5, 170,) but the thorax is too strongly punctured, and the third joint of the antennæ is not twice as long as the second: in none of the specimens seen by me does the black spot of the thorax reach the base. In a specimen from Vermont, the thorax seems to be narrowed from the base, but as the form is not symmetrical, it must be considered as a distortion. The prosternum is always black; the under surface of the thorax is sometimes entirely red, sometimes almost black. In the male the last joint of the antennæ is slightly acuminate; in the female it is rounded.

31. *E. obliquus*, supra fusco-niger, longius cinereo-pubescent, thorace subtransverso, parcius punctulato, antice rotundatim angustato, margine omni testaceo, elytris subcuneatis, macula obliqua basali versus suturam latiore lutea, striis profunde punctatis, interstitiis parce punctatis, subtus rufescens, pectore infuscato, antennis fusco-testaceis, articulo 3^{io} angusto 4^{to} longitudine æquali. Long. .20—.23.

Say, Trans. Am. Phil. Soc. 6, 174.

Ampedus scitulus Germ. Zeitschr. 5, 168.

Middle and Eastern States, rare. Germar says that this species differs from others by its longer and more strongly serrate antennæ. It is true that the antennæ are strongly serrate, but I find them of the same form in nearly all the species of the present division of the genus; while in *E. linteus*, the antennæ are still more strongly serrate. In my specimens, which are females, the antennæ are but little longer than the thorax; the specimen described by Germar is said to have antennæ half as long as the body, and is certainly a male. Dr. Harris thinks that this is *E. stigma Herbst*; a species placed in *Limonius* by Dejean, and which for the present it is safer to consider as indeterminate, or unknown.

32. *E. areolatus*, rufo-testaceus, cinereo-pubescent, thorace subtransverso, punctulato, antice rotundatim angustato, capite scutello elytrisque nigris, his macula obliqua basali, apiceque late rufo-flavis, striis profunde punctatis, interstitiis parce punctatis, antennis fuscis, basi testaceis, articulo 3^{io} angusto, 4^{to} longitudine æquali. Long. .18—.22.

Say, Journ. Acad. Nat. Sc. 3, 167.

Middle and Southern States, rare. The only differences between this and the preceding species are those of colour. I am very much disposed to regard them as varieties; if this view should finally prevail, the name *areolatus* has of course precedence.

Erichson has committed a very singular error in quoting Say's species under the genus *Cardiophorus*, (*Germ. Zeitschr.* 2, 321.) The species there described has no resemblance whatever to the present one, and is in reality *Elater curiatus Say*, (*Trans. Am. Phil. Soc.* 6, 173.)

33. *E. luteolus*, rufo-testaceus, longius flavo-pubescent, thorace subtransverso, antrorsum rotundatim angustato, parce punctulato, elytris subcuneatis, saturatioribus, striis profunde punctatis, interstitiis parce punctulatis, antennis articulis 2 et 3 subæqualibus maiusculis. Long. .15.

One specimen, North Carolina, Dr. Zimmermann. This is the smallest species of the genus known to me; in form and structure it altogether resembles *E. obliquus*, except that the thorax is more regularly narrowed and rounded anteriorly, and that the second joint of the antennæ is very little shorter than the third; the specimen is a male, and has antennæ fully half as long as the body.

34. *E. humeralis*, elongatus, ater nitidus, subtiliter nigro-pubescent, thorace latitudine longiore, antrorsum angustato, vix rotundato, parcius punctato, elytris macula humerali quadrata sanguinea, parallelis, striis punctatis interstitiis vix convexis, rugose punctatis, antennis totis nigris, articulo 3^{io} triangulari 2^{ndo} sesqui maiore. Long. .34.

Melsheimer, Proc. Acad. Nat. Sc. 2, 159.

Pennsylvania. I have only seen the type in Dr. Melsheimer's collection. The third joint of the antennæ, although dilated, is hardly one-half the size of the fourth. Germar's *Ampedus xanthomus* (*Zeitschr.* 5, 168) seems to agree nearly with this, but the size (.25 unc.) is so different, that I cannot consider them as identical.

35. *E. protervus*, elongatus, ater, nitidus, cinereo-pubescent, thorace latitudine longiore, antrorsum a basi paulo angustato, lateribus parum rotundatis, sat dense punctato, elytris parallelis basi anguste et epipleuris sanguineis, striis punctatis, interstitiis subconvexis, rugose punctatis, antennis piceis, articulo 3^{io} 2^{ndo} paulo maiore, tarsis rufo-piceis. Long. .4.

Lake Superior. It is difficult to determine whether this should not be considered as *E. semicinctus* Randall (B. Journ. Nat. Hist. 2, 10;) but the expression "body considerably dilated," coupled with the observation that "it seems most nearly allied to *E. discoideus*," has induced me to refer Randall's description to No. 8 of this genus, above described. The thorax in this species is less narrowed in front than usual; the elytra are also parallel beyond the middle, then gradually narrowed to the tip.

36. *E. stigmatus*, elongatus, ater cinereo-pubescent, thorace latitudine longiore, antrorsum subangustato, lateribus antice subrotundatis, sat dense punctato, postice obsolete canaliculato, elytris macula hamata basali, humerum includente, alteraque utrinque transversa pone medium flavis: striis punctulatis interstitiis planis, rugose punctatis, pedibus antennarumque basi testaceis, his articulis 2 et 3 æqualibus. Long. .21—.25.

Lake Superior, two specimens. A very distinct and pretty species; the yellow spots of the elytra are arranged in the following manner: a line from the middle of the base follows along the fourth interstice for one-third the length of the elytra; it there meets a broader line running obliquely inwards from below the humerus, and slightly dilated along the margin; the posterior spot is small, and situated one-third the entire length of the elytra from the apex; in the second specimen the hook formed by the junction of the two anterior lines is imperfect, and the posterior spot is larger, becoming almost round; the tibiæ and tarsi are much paler than the femora. The second and third joints of the antennæ together are not longer than the fourth.

37. *E. rufilabris*, elongatus, linearis, nigro-piceus fusco-pubescent, thorace latitudine fere sesqui longiore, antice vix angustato, ad apicem paulo rotundato, punctato, basi lutea, elytris basi anguste luteis, striis punctulatis, interstitiis confertim punctatis, pedibus flavo-testaceis, antennis elongatis piceis, basi testaceis, articulis 2 et 3 æqualibus 4^{to} coniunctis brevioribus. Long. .25—.32.

Germ. Ins. Nov. 47.

Ampedus rufilabris Germ. Zeitschr. 5, 169.

Middle and Southern States. The head is larger than usual, although there is not a great deal of difference in form between this and the two preceding species; this is, however, narrower and more parallel. The outline of the front is more rounded than usual, and the margin is slightly reflexed.

BLAUTA Lec.

Frons convexiuscula, paulo producta, margine rotundata, non impressa; labrum antice rotundatum; antennæ serratæ, 11-articulatæ, articulo 1^{mo} medioeri, 2 et 3 parvis, hoc sesqui maiore, 11^{mo} subconstricto: prosternum antice lobatum, mucrone postico leviter inflexo, sutura obliqua, subconcaeva, usque ad medium valde exarata; mesosternum non protuberans; coxæ posticæ laminis intus sensim et modice dilatatis, margine bisinuato, dente interno magno, acuto: tarsi pubescentes, articulo 1^{mo} sequentibus duobus æquali, 2—4 sensim brevioribus, subtus breviter lobatis et spongiosis: 5^{to} primo æquali, unguiculis simplicibus.

A curious, subcylindrical insect, which I am very much disposed to consider *Ampedus cribrarius* Germ. (Zeitschr. 5, 178;) but as it has the thorax a little longer than wide, and the antennæ very distinctly serrate, it is more proper to retain it as distinct from that spe-

cies. The posterior angles of the thorax are carinated, with the carina slightly diverging from the margin: the basal fissures are short and distinct.

1. *B. cauta*, subcylindrica, castanea, helvo-pubescent, capite thoraceque confertim punctatis, hoc latitudine paulo longiore, antrorsum subangustato, lateribus rectis apice paulo rotundatis, elytris striis profundis punctatis, interstitiis subconvexis punctatis. Long. .55.

One specimen, Georgia. The sides of the thorax are not parallel, but converge slightly anteriorly: the posterior angles continue the line of the sides; they are straight considerably in front of the middle, then slightly rounded to the apex.

CRATONYCHUS Dej. Er.

1. *C. corticinus*, linearis elongatus, parcius longe sordide pilosus, piceus, fronte concava, thorace latitudine longiore, antrorsum paulo angustato, lateribus rectis, grosse punctato, parcius in medio, postice canaliculato, angulis posticis productis divergentibus, elytris parallelis, striis punctatis vix impressis, interstitiis rugose punctulatis, antennis thorace sesqui longioribus, (maris sublanuginosis,) articulis 2 et 3 subæqualibus. Long. .58.

Elater corticinus Say, Journ. Acad. Nat. Sc. 3, 174; Trans. Am. Phil. Soc. 6, 183.

One specimen, Georgia. The sides of the thorax are scarcely rounded at the anterior angles: the divergence of the posterior angles causes them to appear slightly concave: the carina is about one-third the length of the thorax and very near to the margin.

2. *C. longulus*, linearis elongatus, piceo-niger griseo-pubescent, fronte concava, thorace latitudine longiore, antrorsum paulo angustato, lateribus rectis apice subrotundatis, grosse punctato, parcius in medio, angulis posticis divergentibus, postice canaliculato, elytris parallelis, striis punctatis haud vel vix impressis, interstitiis parce punctulatis, pedibus rufis, antennis, (maris lanuginosis,) articulo 3^{io} secundo sesqui longiore. Long. .4.

Four specimens, San Diego, California, all of which appear to be males: the antennæ are not much longer than the head and thorax, and are somewhat strongly serrate.

Found with them was a single female, having a complete resemblance in the form and sculpture of every portion of the body, except the thorax, which is brownish red, with the sides straight as far as the middle, then broadly rounded to the apex: the posterior angles are hardly divergent: the antennæ are formed as in the male, and finely pubescent.

3. *C. macer*, elongatus fere linearis, testaceus, vel fuscus, longius pubescens, fronte concava, thorace latitudine longiore, antrorsum angustato, lateribus fere rectis, sat grosse punctato, parcius in disco, postice canaliculato, angulis posticis non divergentibus, elytris a basi subangustatis, striis punctatis, leviter impressis, interstitiis punctis paucis notatis, antennis pubescentibus thorace sesqui longioribus, articulo 3^{io} 2^{do} sesqui longiore. Long. .43.

Georgia and New York. Easily distinguished by its very narrow body, not entirely linear as in the preceding, nor as strongly lanceolate as in the following.

4. *C. cuneatus*, modice lanceolatus, fusco-piceus, densius fusco-pubescent, fronte concava, thorace latitudine subbrevisiore, antrorsum angustato, lateribus late vix rotundatis, disco minus dense sat grosse punctato, linea dorsali lævi antice obsoleta, elytris a basi angustatis, striis punctatis subimpressis, interstitiis disperse punctulatis, antennis (maris lanuginosis) thorace sesqui longioribus, articulo 3^{io} 2^{do} duplo maiore. Long. .62.

Georgia. I have only males. The smooth but not impressed dorsal line distinguishes this from the allied species. The sides of the thorax are thickly, the disc less densely, punctured; the posterior angles have two distinct carinæ. In one specimen, which is possibly a distinct species, the thorax is less convex, and with the exception of the dorsal line is equally and densely punctured.

5. *C. incertus*, piceus, fusco-pubescent, fronte concava, thorace antrorsum a basi angustato, latitudine vix brevior, lateribus late rotundatis, crebre punctato, postice subcanaliculato, elytris subparallelis, striis impressis punctatis, interstitiis subtiliter rugose-punctulatis, antennis pedibusque castaneis, illis articulo 3^{io} 2^{ndo} duplo longiore, (maris lanuginosis, feminae pubescentibus.) Long. .61—.75.

Missouri Territory. The sides of the thorax in one male are nearly straight; in the females they are broadly rounded: the elytra are very slightly narrowed from the base in the males, while they are parallel in the females. This species is very similar to the next, and is only to be distinguished by the more gradually rounded sides of the thorax. The posterior angles are bicarinate.

6. *C. decumanus*, piceus, fusco-pubescent, fronte concava, thorace latitudine fere brevior, lateribus postice fere parallelis antice rotundatis, crebre grossius punctato, postice vix canaliculato, elytris parallelis, striis impressis punctatis, interstitiis punctulatis, antennis (maris longius, feminae subtilius) pubescentibus, articulo 3^{io} 2^{ndo} duplo longiore. Long. .68—.73.

Erichson, Germ. Zeitschr. 3, 104.

Maryland, Prof. Adams. Although differing but slightly in appearance from the preceding, the antennæ of the male are not covered with erect hairs, but with prostrate hairs, longer than those seen in the female. The inner carina of the posterior angles of the thorax is distinct.

One female differs in having the punctures of the interstices of the elytra very distinct.

7. *C. clandestinus*, niger, subtiliter cinereo-pubescent, fronte concava, thorace latitudine longiore, elytris vix latiore, lateribus fere parallelis antice late rotundatis, confertim subtilius punctato, postice breviter canaliculato, elytris parallelis, striis punctatis, interstitiis subtiliter rugose punctulatis, antennis lanuginosis piceis articulis 2 et 3 parvis æqualibus, pedibus rufis. Long. .32—.37.

Erichson, Germ. Zeitschr. 3, 112.

Middle and Southern States.

8. *C. secretus*, niger, nitidus, pube subtili atro-griseo vix conspicua vestitus, fronte late concava, fortius marginata, thorace latitudine longiore lateribus parallelis antice rotundatis, minus convexo, disperse punctato, postice breviter canaliculato, elytris thorace vix angustioribus parallelis, striis profunde punctatis, interstitiis disperse punctulatis, pedibus antennisque rufis, his breviter lanuginosis, articulo 3^{io} 2^{ndo} paulo longiore. Long. .32—.41.

Georgia. The carina of the posterior angles of the thorax is very long, very close to the margin, and parallel with it. The form of the thorax causes this species to resemble the preceding, but its characters are very different. It, however, forms the passage from the species having the front concave, to those with the front flattened or convex.

9. *C. ignobilis*, fusco-piceus, elongatus, griseo-pubescent, fronte plana, margine subreflexo, thorace latitudine subbreviore antrorsum paulo angustato, lateribus rectis, minus convexo, sat dense punctato.

tato, carina angulari margini valde approximata, elytris a basi attenuatis, punctis magnis seriatis, interstitiis parce punctulatis, antennis elongatis, valde serratis, articulo 3^{io} secundo sesqui longiore, pedibus castaneis. Long. .41.

Melanotus ignobilis Mels. Proc. Acad. Nat. Sc. 32, 152.

A very distinct species, of which I have seen only the single male found in Pennsylvania by Dr. Melsheimer: the pubescence of the antennæ is very short, but dense and erect.

10. *C. depressus*, modice elongatus, piceus, griseo-pubescent, fronte plana, submarginata, thorace latitudine non brevior, antrosum angustato, lateribus rectis, antice vix rotundatis, parce distincte punctato, minus convexo, carina angulari margini valde approximata, elytris a basi attenuatis striis impressis subtilius punctatis, interstitiis vage punctulatis, antennis (maris lanuginosis, feminae longius pubescentibus) articulo 3^{io} 4^{to} vix brevior, pedibus rufis. Long. .36—.4.

Ctenonychus depressus Mels. Proc. Acad. Nat. Sc. 2, 151.

Middle and Southern States, not rare. In the male the elytra are more attenuated, and almost straight on the sides; in the female the sides are slightly rounded.

11. *C. angustatus*, rufo-testaceus, nitidus, modice elongatus subtiliter griseo-pubescent, fronte plana, thorace minus convexo latitudine vix brevior, antrosum angustato, lateribus rectis apice paulo rotundatis parce subtilius punctato, carina angulari elongata margini valde approximata, elytris striis vix impressis distincte punctatis, interstitiis vix subtiliter punctulatis, antennis articulo 3^{io} 4^{to} paulo brevior. Long. .36.

Erichson, Germ. Zeitschr. 3, 113.

Ctenonychus testaceus Mels. Proc. Acad. Nat. Sc. 2, 151.

One specimen from Pennsylvania in Dr. Melsheimer's collection, which agrees with Erichson's description in every respect except in being rather paler coloured.

12. *C. trapezoides*, fusco-piceus, longius griseo-pubescent, fronte fere plana, utrinque paulo impressa, thorace latitudine brevior, antrosum paulo angustato, parce grossius punctato, lateribus rectis, carina angulari margini approximata, elytris subparallelis, striis impressis subtilius punctatis, interstitiis parce punctatis, pedibus rufis, antennis piceo-rufis, (maris sublanuginosis) articulo 3^{io} 2^{ndo} duplo longior. Long. .31—.36.

New Jersey, Mr. Guex. Similar in characters to *C. depressus*, but somewhat less elongated, with a shorter thorax; the third joint of the antennæ is intermediate in size to the second and fourth.

13. *C. tænicollis*, niger, minus subtiliter albido-pubescent, fronte subimpressa, marginata, thorace latitudine non brevior, minus convexo, lateribus postice parallelis, antice rotundatis, parce punctato, margine omni læte rufo, elytris parallelis, striis punctatis, vix impressis, interstitiis parce fortius punctatis, margine basali pedibusque læte rufis, antennis piceo-rufis longius pubescentibus, articulis 2 et 3 parvis æqualibus. Long. .35.

One specimen, Philadelphia, Mr. Schafhirt. Peculiar from the very quadrate form of the thorax; the inflexed portion of the thorax is red, the prosternum black; the carina of the posterior angles of the thorax is short, and diverges a little from the margin; the antennæ do not reach beyond the base of the thorax.

14. *C. Leonardi*, niger, subtilius cinereo-pubescent, fronte paulo convexa, thorace læte sanguineo, latitudine vix longior, convexiusculo antrosum angustato, et lateribus rotundato, punc-

tato, parcius in disco, postice subcanaliculato, elytris subparallelis, striis punctatis, interstitiis parce distinctius punctatis, pedibus rufo-piceis, antennis (maris lanuginosis, feminae pubescentibus) articulis 2 et 3 parvis æqualibus. Long. .42.

Georgia, Pennsylvania, and New Hampshire; for a fine specimen from the last locality, collected by the Rev. Mr. Leonard, I am indebted to Dr. Harris. The whole appearance is precisely that of *Elater rubricollis*, but the thorax is brighter coloured. The prosternum is black; the carina of the posterior angles of the thorax is one-fourth the length of the thorax, and diverges slightly. Dr. Harris considers this as *Elater collaris* Say: for the reasons which compel me to differ with him, see the remarks under species (29) of *Elater*.

15. *C. scrobicollis*, piceus, elongatus, fusco-pubescent, fronte minus convexa, thorace latitudine sublongiore, antrorsum sensim angustato, lateribus vix rotundatis, canaliculato, grosse sat dense punctato, elytris striis punctatis, interstitiis perparce punctatis, antennis (maris lanuginosis, feminae pubescentibus) articulis 2 et 3 subæqualibus. Long. .6—·67.

Middle States and Lake Superior. Brownish piceous, not densely clothed with brown pubescence. Head coarsely and densely punctured, front slightly flattened, not impressed. Antennæ longer than the head and thorax; pubescence in the male erect, in the female depressed; third joint hardly larger than the second. Thorax a little longer than wide, not wider than the elytra, sides oblique from the base, and hardly rounded; disc very coarsely, tolerably densely punctured, dorsal line impressed posteriorly, obsolete before the middle; posterior angles continuing the line of the side, carina extending almost to the middle, internal carina wanting. Elytra slightly narrowed from the base in the male, nearly parallel for two-thirds the length in the female, striæ not deep, coarsely punctured, interstices with a few fine punctures; feet very dark castaneous.

A male specimen from New York differs in having the sides of the thorax nearly parallel behind the middle, and considerably rounded in front; if this should not be an accidental distortion, it would seem to indicate a different species; but after careful comparison no other difference could be discovered.

16. *C. inæqualis*, piceus, fusco-pubescent, fronte convexa, thorace subtransverso, postice subcanaliculato, lateribus subangulato, grosse sat dense punctato, elytris subparallelis, seriatim punctatis, interstitiis distinctius parce punctatis, antennis (feminae) pubescentibus articulo 3^{io} secundo sesqui maiore. Long. .70.

One specimen from Point Kewenaw, Lake Superior. Brownish piceous, not densely clothed with brown pubescence. Head coarsely densely punctured, convex, scarcely impressed. Antennæ longer than the head and thorax; third joint much smaller than the fourth, and one-half larger than the second. Thorax as wide as the elytra, a little broader than long, sides behind the middle almost parallel, then strongly narrowed to the apex, and almost angulated on the sides; disc very coarsely and tolerably densely punctured, slightly channelled posteriorly; posterior angles diverging from the line of the side; carina extending nearly midway from the angle to the anterior margin, internal carina hardly visible; elytra nearly parallel, narrowed for the posterior third of their length; striæ not impressed, composed of well defined lines of punctures; interstices flat, distantly and strongly punctured; beneath, uniform piceous brown; legs castaneous.

17. *C. glandicolor*, castaneus, fusco-pubescent, fronte minus convexa, thorace latitudine vix longiore, a basi sensim angustato, lateribus rectis ad apicem subito rotundatim angustatis, postice subcanaliculato, parce grosse punctato, elytris subparallelis, striis punctatis, interstitiis planis perparce punctatis, antennis (feminæ) pubescentibus, articulis 2 et 3 æqualibus. Long. .70.

Melanotus glandicolor Mels. Proc. Acad. Nat. Sc. 2, 152.

One specimen from Pennsylvania in Dr. Melsheimer's collection. This species is very distinct by the form of the thorax, the sides of which are perfectly straight and oblique from the tip of the posterior angles to within one-sixth of the apex, where they are suddenly rounded; the carina of the posterior angle is one-third the length of the thorax.

18. *C. fissilis*, fusco-piceus, brunneo-pubescent, fronte margine paulo reflexo, parum producto, thorace elytris latiore, latitudine paulo longiore, antrorsum valde angustato, lateribus rotundatis, angulis posticis bicarinatis non divaricatis, sat grosse punctato, non canaliculato, elytris a basi attenuatis, seriatim punctatis, interstitiis parce punctatis, et rugosis, antennis articulo 3^{io} sequente vix brevior. Long. .56—.62.

Cratonychus laticollis Erichson, Germ. Zeitschr. 3, 102.

? *Elater brevicollis* Herbst, Käfer, 10, 46, tab. 162, fig. 3.

Cratonychus ochraceipennis Melsheimer, Proc. Acad. Nat. Sc. 2, 150.

Cratonychus sphenoidalis Melsheimer, Proc. Acad. Nat. Sc. 2, 150 (teste Melsheimer.)

Elater cinereus†(*fissilis*) Say, Trans. Am. Phil. Soc. 6, 183.

Elater (Melanotus) cinereus†Harris, Ins. Injurious to Vegetation 2nd ed. 48.

Abundant in the Middle and Southern States. Easily distinguished by the thorax being wider than the elytra, and not channelled. *C. ochraceipennis* is an immature specimen, in a bad condition. The posterior angles of the thorax in this species are distinctly bicarinate, and the basal fissures very distinct.

19. *C. communis*, fuscus, brunneo-pubescent, fronte non concava, paulo producta, thorace elytris sublatiore, latitudine non longiore, antrorsum valde angustato, angulis posticis bicarinatis, sat grosse punctato, postice canaliculato, elytris striis subimpressis punctatis, interstitiis minus dense rugose punctulatis, antennis articulo 3^{io} sequente paulo brevior. Long. .45—.55.

Dejean, Cat. ed. 3^{io}: Erichson, Germ. Zeitschr. 3, 102.

Elater communis Gyllenhal, Schönh. Syn. Ins. 3, Ap. 138, (1817;) Say, Tr. Am. Phil. Soc. 6, 184.

Perimecus communis Kirby, Fauna Bor. Am. 148.

Elater (Melanotus) communis Harris, loc. cit. 48.

Elater cinereus Weber, Obs. Ent. 77, (1801.)

Abundant, as far as Nebraska. The last synonym is usually given to the preceding species, but, as Weber says, "Thorax punctatus basi canaliculatus," it cannot be there placed. His name has properly priority; but as many entomologists will refuse to adopt the view here given, (which has indeed already been advanced by Kirby,) the change of name would only lead to confusion.

One specimen from New Orleans, given me by Dr. Schaum, has the front moderately deeply concave: the thorax appears a little less convex, and more deeply channelled; but there does not appear sufficient reason to separate it.

20. *C. exuberans*, fusco-piceus, brunneo-pubescent, fronte non concava, paulo producta, thorace

latitudine longiore, antrorsum modice angustato, lateribus latius rotundatis, sat grosse punctato, angulis posticis bicarinatis, elytris a basi angustatis, striis punctatis subimpressis, interstitiis parce punctulatis, pedibus obscure ferrugineis, antennis articulo 3^{io} sequente paulo brevior. Long. .53.

Two specimens, Santa Fe, collected by Mr. Fendler. This species is related to the two preceding, but differs by its narrower form, the thorax being proportionally longer, and not wider than the elytra, less narrowed in front, and less rounded on the sides.

21. *C. parumpunctatus*, nigro-piceus, cinereo-pubescens, fronte non concava, thorace latitudine paulo longiore, antice præcipue versus apicem magis angustato, lateribus rotundatis, parce modice punctato, postice subcanaliculato, elytris a basi angustatis, striis punctatis, paulo impressis, interstitiis parce punctulatis, pedibus antennisque ferrugineis, his articulo 3^{io} sequente paulo brevior. Long. .45.

Melsheimer, Proc. Acad. Nat. Sc. 2, 150.

Middle States. This species has very much the appearance of *C. communis*, but is darker coloured, and has the punctures of the thorax somewhat smaller, and much less dense: even at the sides they are not at all confluent; the posterior angles of the thorax do not appear bicarinated; otherwise there is no special difference.

22. *C. verberans*, fuscus, cinereo-pubescens, fronte non concava, thorace latitudine non longiore, antrorsum valde angustato, lateribus rotundatis, parce modice punctato, angulis posticis vix bicarinatis, elytris a basi angustatis, striis punctatis subimpressis, interstitiis parce punctulatis, antennis pedibusque fusco-testaceis, illis articulo 3^{io} sequente sesqui minore. Long. .39—47.

Two specimens, Maryland. Resembles exactly *C. communis*, but the thorax is less rounded on the sides, and less densely punctured: there is no trace of a dorsal channel: the inner one of the carinæ of the posterior angles is less distinct, and the third joint of the antennæ is proportionally smaller, being about intermediate in size between the second and fourth.

23. *C. emissus*, longior, fuscus, cinereo-pubescens, fronte non concava, thorace latitudine non longiore, lateribus parallelis, antice rotundatis, modice punctato, densius ad latera, angulis posticis bicarinatis, elytris a basi subangustatis, striis punctatis subimpressis, interstitiis parce punctatis, antennis pedibusque testaceis, illis articulo 3^{io} sequente sesqui minore. Long. .41.

One specimen, Georgia. More cylindrical than the preceding, with the elytra less narrowed posteriorly, and easily distinguished by the sides of the thorax being nearly parallel for three-fourths of their length. The punctures of the thorax are finer and more numerous than in the next species.

24. *C. infaustus*, piceo-fuscus, longior, cinereo-pubescens, fronte non concava, thorace latitudine longiore, lateribus rectis, paulo convergentibus, antice rotundatis, parce punctato, elytris a basi angustatis, striis impressis punctatis, interstitiis parce punctulatis, pedibus antennisque castaneo-rufis, his articulo 3^{io} sequente subbrevior. Long. .46.

Georgia. The straight, slightly converging sides of the thorax, rounded only near the apex, will distinguish this species: the posterior angles have only one carina.

25. *C. cribulosus*, fuscus, longius cinereo-pilosus, fronte non concava, thorace latitudine non longiore, antrorsum angustato, lateribus (maris fere rectis) feminae rotundatis, cribratim punctato,

densius ad latera, elytris a basi subangustatis, striis impressis punctatis, interstitiis parce punctulatis, antennarum articulo 3^{io} sequenti æquali, pedibusque fusco-testaceis. Long. ·37—·43.

Nebraska Territory. The difference in the form of the thorax of the two sexes is very great: in the male the sides converge regularly, with scarcely any curvature; in the female the disc is more convex, and the sides are considerably rounded, especially in front: the third joint of the antennæ is wider than usual, and nearly as wide as the fourth.

26. *C. pertinax*, piceo-niger, parce longius cinereo-pilosus, fronte subconcava, thorace latitudine subbreuiore, convexo, lateribus postice parallelis, ante medium valde rotundatis, parce punctato, punctis in medio fere obsoletis, postice canaliculato, elytris lateribus parallelis, postice oblique angustatis, striis punctatis vix impressis, interstitiis parce subtiliter punctulatis, antennis pedibusque rufis, illis articulo 3^{io} sequente non breuiore. Long. ·42.

Elater pertinax Say, Trans. Am. Phil. Soc. 6, 185.

Massachusetts and Georgia. An easily recognised species: the punctures of the thorax, anteriorly and at the sides, are tolerably large; in the middle they are almost obsolete.

27. *C. dubius*, piceo-niger, cinereo-pubescens, fronte non concava, thorace latitudine non breuiore, lateribus rectis, convergentibus, apice rotundatis, parce punctato, subtilius ad medium, postice canaliculato, elytris antice fere parallelis, striis punctatis vix impressis, interstitiis rugose punctulatis, pedibus antennisque rufis, his articulo 3^{io} sequente non breuiore. Long. ·33.

One specimen, New York. The deep posterior dorsal channel, and the fine punctures of the interstices of the elytra will distinguish this from the next species: it may possibly be the male of the preceding species, but there is no evidence of it except the general similarity of sculpture: the pubescence is denser and not so long: the thorax, however, bears pretty much the same relation in the two species as in the two sexes of *C. cribulosus*.

28. *C. tenax*, piceo-niger, cinereo-pubescens, fronte non concava, thorace latitudine longiore, antrorsum subangustato, lateribus antice paulo rotundatis, parce æqualiter punctato, postice vix obsolete canaliculato, elytris striis punctatis, interstitiis minus subtiliter punctatis, pedibus antennisque rufis, his articulo 3^{io} sequente paulo breuiore. Long. ·3—·35.

Elater tenax Say, Trans. Am. Phil. Soc. 6, 185.

Middle and Southern States. The punctures of the interstices of the elytra are as large as those of the striæ, and will distinguish this from all other species here described. The striæ in one specimen are tolerably deep; in two others they are not impressed. The elytra in the male are narrowed slightly from the base; in the female they appear nearly parallel.

29. *C. americanus*, fuscus, cinereo-pubescens, fronte non concava, paulo producta, thorace latitudine non longiore, antrorsum magis angustato, lateribus ante medium rotundatis, postice breviter canaliculato, elytris a basi angustatis, striis fortius punctatis, non impressis, interstitiis parce punctulatis, antennis articulo 3^{io} secundo æquali. Long. ·28—·35.

Erichson, Germ. Zeitschr. 3, 114.

Elater americanus Herbst, Käfer, 10, 74; tab. 165, fig. 2.

A very common species: the punctures of the thorax are hardly smaller at the middle: the small size of the third joint of the antennæ will distinguish it from any with which it is liable to be confounded: Erichson mentions neither this, nor the posterior dorsal chan-

nel, which is, however, very short. The thorax is more convex in the female, and more rounded on the sides than in the male.

30. *C. insipiens*, elongatus, testaceus, cinereo-pubescens, fronte non concava, paulo producta, thorace latitudine longiore, lateribus antice late rotundatis, minus dense punctato, postice canaliculato, elytris subparallelis, striis punctatis impressis, interstitiis punctulatis, antennis articulo 3^{io} sequente paulo brevior. Long. .23.

Elater insipiens Say, Trans. Am. Phil. Soc. 6, 184.

Southern States. Distinguished from the following by the dorsal channel of the thorax, and its rounded sides.

31. *C. tenellus*, elongatus, testaceus, cinereo-pubescens, fronte non concava, paulo producta, thorace latitudine longiore, lateribus rectis obliquis, minus convexo, minus dense punctato, non canaliculato, elytris a basi subangustatis, striis punctatis impressis, interstitiis parce punctulatis, sutura late fuscescente. Long. .18—.23.

Erichson, Germ. Zeitschr. 3, 114.

Georgia. The darker suture gives this insect somewhat the appearance of *Adrastus recticollis*, but a very slight glance enables them to be separated.

32. *C. oregonensis*, nigro-piceus, longior, cinereo-pubescens, fronte non concava, vix producta, thorace latitudine longiore, convexiusculo, lateribus obliquis ad apicem rotundatis, angulis posticis divaricatis, sat grosse, lateribus densius punctato, postice canaliculato, elytris fere parallelis, striis punctatis vix impressis, interstitiis parce punctulatis, pedibus antennisque piceis, his articulo 3^{io} sequenti sesqui brevior. Long. .48.

One specimen, Oregon, Col. M'Call. Sufficiently distinct from any of those above described, and resembling perhaps most nearly *C. infaustus*, but having the thorax more densely punctured and more oblique on the sides, and the third joint of the antennæ hardly more than half the size of the fourth, and only one half larger than the second.

33. *C. longulus*, testaceo-fuscus, elongatus, cinereo-pubescens, fronte non concava, thorace latitudine longiore, lateribus obliquis antice vix rotundatis, parce subtiliter punctato, postice breviter canaliculato, elytris fere parallelis striis punctatis subimpressis, interstitiis parce subtiliter punctatis, antennis articulo 3^{io} 2^{ndo} sesqui longiore. Long. .37.

Georgia. My specimens are in bad condition. The third joint of the antennæ is intermediate in length between the second and fourth: the feet are paler than the body.

34. *C. sagittarius*, fuscus, vel testaceus, elongatus, cinereo-pubescens, fronte subconcava, apice subangulata, thorace minus convexo, latitudine non longiore, antrorsum angustato, lateribus antice late rotundatis, postice breviter canaliculato, parcius sat grosse punctato, elytris a basi angustatis, seriatim punctatis, interstitiis parce punctulatis, antennis articulo 3^{io} secundo sesqui longiore, pedibus pallidioribus. Long. .54.

Middle States, rare. This and the next species seem to differ from all the preceding ones in having the clypeus almost angulated at the apex, although not as convex as in the species of *Elater*: from *C. corticinus*, *macer*, and *exuberans*, which alone resemble it in general form, it is easily distinguished by the characters above given.

35. *C. paradoxus*, elongatus, nigro-piceus, cinereo-pubescens, fronte subconcava, apice suban-

gulata, thorace minus convexo, antrorsum valde angustato, lateribus rotundatis, (vel potius ad medium obsolete angulatis,) carina angulari elongata, minus dense sat grosse punctato, elytris a basi angustatis, parce subtilius punctatis, striis internis oblitteratis, antennis pedibusque rufis, illis articulo 2^{ndo} 3^{ioque} æqualibus. Long. .6.

Melanotus paradoxus Melsheimer, Proc. Acad. Nat. Sc. 2, 152.

One specimen from Pennsylvania, in Dr. Melsheimer's collection. The sides of the thorax are so obtusely angulated, that they may almost be called rounded: the outer striæ of the elytra are punctured and slightly impressed: the inner ones are reduced to small punctures, which are confused with those belonging to the interstices; the thorax has a very slight and short impression at the middle of the base. This species agrees accurately with *C. proluxus* Er. (Germ. Zeitschr. 3, 94) from Mexico, except that the breast and abdomen are not castaneous.

Besides these, there are described as occurring in North America, the following species, which I do not possess, or cannot identify with certainty.

C. castanipes Er. Germ. Zeitschr. 3, 95. *Perimecus fulvipes* Kirby, Fauna Bor. Am. 148.

C. spadix Er. Germ. Zeitschr. 3, 103. ? *C. cuneatus* Lec.

C. abdominalis Er. Germ. Zeitschr. 3, 104.

C. vetulus Er. Germ. Zeitschr. 3, 105.

Perimecus similis Kirby, Fauna Bor. Am. 149.

MONOCREPIDIUS *Esch. (emend.)*

Frons paulo convexa, antice rotundatim marginata, margine prominulo: mandibulæ parvæ, apice subemarginatæ: palpi articulo ultimo triangulari, oblique truncato, acuto: antennæ parum serratæ, articulo primo elongato, 2 et 3 sequentibus angustioribus, 4^{to} coniunctis longioribus: prosternum antice lobatum, mucrone postice non inflexo, sutura laterali recta, antice haud, vel vix excavata: mesosternum non protuberans: coxæ posticæ laminis intus subito modice dilatatis, dente interno magno, rotundato: tarsi pubescentes, articulo 1^{mo} sequentibus duobus æquali, 4^{to} subtus sæpe lobato, in (C.) autem simplici: 5^{to} longiore, unguiculis integris.

In this genus I include several species, placed by Germar in his second division of Cryptohypnus, with which they have very little relation: they accord nearly with Elater, and seem to differ only in having the front less convex and not angulated, the first joint of the antennæ elongated, and the internal tooth of the posterior coxæ rounded. I was at first inclined to consider the species like *El. dorsalis*, in which the tarsi are not lobed, as a distinct genus; but finding no other difference, and seeing, moreover, that in the species with lobed tarsi, there is no constancy in the form of the prolongation, it appears more natural to consider them as forming one natural genus, in which, as in many others of this tribe, the form of the fourth joint of the tarsi is variable: the posterior angles of the thorax are carinate, produced and sharp: basal fissures none.

Our species may be grouped as follows:—

- | | | | | | |
|--|---|---|---|---|-----------|
| A. Tarsi articulo 4 ^{to} lobato, lobo valde dilatato | - | - | - | - | Sp. 1—3. |
| B. Tarsi articulo 4 ^{to} lobato, lobo angusto, (frons convexior:) | - | - | - | - | Sp. 4—8. |
| C. Tarsi articulo 4 ^{to} non lobato, (frons convexior:) | - | - | - | - | Sp. 9—14. |

The latter division differs from *Cryptohypnus*, by the prosternum not being dilated in the middle, by the tarsi not being furnished with long bristles, and by the coxal plates being less dilated.

A. *Tarsi articulo 4^{to} lobo dilatato instructo.*

1. *M. lividus*, fuscus pube densa pallide cinereo-fusca vestitus, thorace elongato, antrorsum angustato, lateribus late rotundatis, angulis posticis divergentibus, elytris striis punctatis, antennis testaceis, pedibus pallidis. Long. .5—7.

Elater lividus De Geer, Ins. 4, 162; tab. 18, fig. 13.

Elater castanipes†Herbst, Käfer, 10, 23; tab. 160, fig. 5.

Elater lobatus Say, Journ. Acad. Nat. Sc. 3, 175; Trans. Am. Phil. Soc. 6, 174.

Monocrepidius lobatus Germ. Zeitschr. 1, 228.

Middle and Southern States. De Geer's figure and description cannot possibly refer to any other North American species: in a report upon the Coleoptera described by Beauvois, by M. Chevrolat, (Ann. Ent. Soc. France, Sept. 1852,) the name of De Geer is given to *Elater elongatus Beauv.*, a species mentioned as occurring in Hayti: as, however, De Geer states that his specimens came from Pennsylvania, it is obviously imprudent to apply his specific name to a West Indian species, until specimens from different localities have been compared, and their identity fully shown. The female is larger and more robust than the male, and has the sides of the thorax more rounded anteriorly. Germar places this among the species that have the elytra armed with an apical spine, but there is no such character to be seen in any of my specimens.

2. *M. aversus*, fuscus, elongatus, pube densa subcinerea brevissima vestitus, thorace infra flavo-marginato, elongato, lateribus vix rotundato, basi flava, angulis posticis non divaricatis, elytris striis punctatis, scutello, antennis, pedibusque flavo-testaceis. Long. .36.

Georgia, rare. The body is entirely, finely and densely punctulate, as in the preceding species; the pubescence is very short and depressed, hardly altering the general colour of the insect.

3. *M. suturalis*, fuscus, tenuiter cinereo-pubescent, thorace testaceo, linea dorsali fusca, elongato, lateribus late rotundatis, punctato, elytris parallelis, testaceis, vitta communi suturali ad basin et versus apicem latiore, margineque pone medium fuscis, striis punctatis, interstitiis subtilissime punctulatis, antennis pedibusque flavis. Long. .27.

A specimen from Alabama, communicated by Dr. Harris, under the name adopted. This species is very distinct from the two preceding by the distinct punctures of the thorax. The head is fuscous, with the palpi and antennæ pale yellow. The under surface is fuscous, with the exception of the feet, the anterior margin of the prosternum, and the inflexed portion of the prothorax, which are testaceous yellow.

B. *Tarsi articulo 4^{to} lobo angusto, (frons convexior.)*

4. *M. sordidus*, fuscus pube subtili sordida dense vestitus, thorace elongato, convexiusculo, lateribus late rotundato, punctato, angulis posticis pallidioribus subdivergentibus, elytris striis punctatis, interstitiis vix subtilissime punctulatis, antennis articulo 3^{io} 2^{ndo} longiore, testaceis, palpis pedibusque flavis. Long. .31—37.

Two specimens found on the Gila River, New Mexico. This is a moderately stout species, intermediate in form between the slender *M. vespertinus* and the other species of this group: the oblique side of the last triangular joint of the palpi is straight, so that those organs appear more acute at the tip than in the other species.

5. *M. vespertinus*, elongatus infra testaceus, supra fuscus, cinereo-pubescent, thorace latitudine longiore, punctulato, vittis duabus dilatatis nigro-fuscis, scutello testaceo, elytris vitta discoidali testacea, pone medium sæpissime interrupta, striis obsolete punctatis, antennis articulis 2 et 3 subæqualibus. Long. .27—.40.

Dej. Cat. p. 98.

Elater vespertinus Fabr. Syst. El. 2, 240: Herbst, Käfer, 10, 131: Say, Tr. Am. Ph. Soc. 6, 177.

Elater finitimus Say, Trans. Am. Phil. Soc. 6, 179.

Monocrepidius serotinus Germ. Zeitschr. 1, 227.

Middle and Southern States. Varies very much both in size and colour: the thorax is occasionally black, with a narrow margin and vitta testaceous: the type with the elytral vitta entire and uniform is rare; the only specimen I have seen was given me by Mr. Guex: the vitta is sometimes reduced to a small humeral spot, one about the middle, and a less distinct one towards the tip. The thorax is longer, less narrowed in front, and much less rounded on the sides in the male than in the female: in both sexes the posterior angles are slightly divergent. *El. finitimus* Say, from a type in Dr. Harris' collection, is a dark variety of this species.

6. *M. auritus*, crassiusculus, fuscus, subtiliter pubescens, thorace convexo, ante medium angustato, angulis posticis vix divergentibus, confertim punctato, testaceo, nigro-bimaculato, (sæpe nigro, angulis posticis vittaque obsolete rufo-testaceis,) scutello sæpe testaceo, elytris macula utrinque basali, (ad medium sæpe extensa,) alteraque apicali rufo-testaceis, (sæpe obsolete,) striis antice punctatis, interstitiis subtilissime punctulatis, pedibus testaceis, antennis basi pallidioribus, articulis 2 et 3 subæqualibus, 4^{to} coniunctis longioribus. Long. .2—.29.

Germ. Zeitschr. 5, 148, 190.

Elater auritus Herbst, Käfer, 10, 145.

Oophorus crassicornis Melsheimer, Proc. Acad. Nat. Sc. 2, 214.

New York, Georgia, Missouri Territory, Lake Superior. Extremely variable in colour; some specimens being testaceous above, with merely the head, margin of the elytra, and narrow posterior fascia blackish, while others are entirely black; these pass insensibly into each other, so that no well defined varieties can be separated. In Melsheimer's catalogue of described Coleoptera of the United States, his *O. crassicornis* is erroneously placed under *Cryptohypnus*, but on inspecting the typical specimen I found the tarsal lobe very distinct. The male differs from the female by the thorax being longer and less rounded on the sides.

7. *M. blandulus*, modice elongatus, parce flavo-pubescent, fuscus, thorace testaceo, fusco bivitato, latitudine longiore, a basi antrosum angustato, lateribus vix rotundatis, punctis minutis et maioribus intermixtis sat dense punctato, elytris testaceis postice gradatim angustatis, margine suturaque postice latiore fuscis, striis antice valde punctatis, interstitiis convexis, vix subtiliter punctulatis, pedibus antennisque flavis, his articulis 2 et 3 æqualibus, coniunctis 4^{to} longioribus. Long. .19.

One male specimen, Georgia. Intermediate in form between *M. vespertinus* and *M.*

auritus, and easily distinguished from both by the punctuation of the thorax being composed of large and small points intermixed: a large series of specimens would undoubtedly show great variations in colour.

8. *M. bellus*, crassiusculus, niger, flavo-pubescent, thorace distinctius punctato, linea dorsali angulisque posticis brevibus testaceis, elytris lineolis pluribus maculaque ante apicem testaceis, striis antice valde punctatis, interstitiis subtilissime punctulatis, pedibus antennisque flavis, his extrorsum crassioribus, articulis 2 et 3 æqualibus, 4^{to} vix longiore. Long. ·14—·16.

Dej. Cat. p. 98.

Elater bellus Say, Journ. Acad. Nat. Sc. 3, 168.

Cryptohypnus bellus Germ. Zeitschr. 5, 147.

Abundant in the middle and Western States. Although Germar affirms positively that the fourth tarsal joint is not lobed, I find no difficulty in distinguishing the appendage, when it is not obscured by dust; it seems, in proportion to size, quite as distinct as in *M. auritus*.

C. Tarsi articulo 4^{to} non lobato: frons convexa.

9. *M. comis*, testaceus, subtiliter longius pubescens, capite piceo, thorace latitudine longiore antice angustato, et lateribus rotundato, sat dense subtilius punctato, vitta dorsali sæpe dilatata picea, elytris striis subtilibus punctatis, interstitiis vix subtilissime punctulatis, vitta dorsali antice abbreviata sæpissime cum sutura confluenta, fasciaque postica nigro-piceis, postpectore abdomineque piceis. Long. ·22—·3.

California: found at San Francisco and San Jose. This species resembles, in appearance, *M. dorsalis*, but is at once distinguished by the finer punctures of the thorax, and the less deep and less strongly punctured striæ of the elytra: the pubescence is longer and denser, although not less fine. The general form of the markings of the elytra is that of *M. dorsalis*, but the dorsal vitta does not appear to be ever interrupted, nor is it ever well separated from the suture, and is most frequently entirely confluent with the suture. The prosternum seems to be always more or less piceous.

10. *M. livens*, testaceus, subtiliter longius pubescens, capite subinfuscato, thorace latitudine longiore, antice angustato et lateribus rotundato, sat dense minus subtiliter punctato, vitta dorsali antice abbreviata infuscata, sæpe obsoleta, elytris striis modice profundis punctatis, interstitiis subtilissime punctulatis, sutura, vitta dorsali antice paulo divergente fasciaque postica infuscatis. Long. ·29.

California, at Vallecitas and at the Colorado river. Differs from the preceding by the coarser punctuation of the thorax, and the uniform yellow colour of the under surface. In one specimen the fuscous markings of the upper surface are reduced to an angulated band near the tip of the elytra, and slightly dilated along the suture.

11. *M. circumscriptus*, nigro-piceus, subtiliter parce pubescens, thorace latitudine longiore, testaceo, vitta dorsali dilatata nigro-picea, confertim minus subtiliter punctato, elytris striis punctatis, sat profundis, interstitiis punctulatis, testaceis vitta integra nigro-picea postice cum sutura confluenta; abdomine lateribus rufescente, antennis pedibusque flavis. Long. ·2—·3.

Elater circumscriptus Germ. Ins. Nov. 46.

? *Cryptohypnus circumscriptus* Germ. Zeitschr. 5, 146.

Middle and Southern States. I place a query before the last synonym, as nothing is

said in the description concerning the testaceous sutural margin of the elytra, and the dorsal vitta of the thorax is said to be abbreviated. Three specimens in my collection agree perfectly with the first description given by Germar: a fourth has a small fuscous fascia near the apex of the elytra, thus approaching Germar's second description: the vitta of the elytra might very easily be so dilated as to remove the sutural yellow margin entirely, and if this form coexisted with the posterior band just mentioned, the elytra would agree with those described in Germar's *Zeitschrift*: but I cannot suppose that the dorsal black vitta of the thorax would ever become abbreviated posteriorly as there described.

Apart from the coloration of the elytra, this species is distinguished from *M. dorsalis* by the longer and more densely punctured thorax: the thorax of the male is almost one-half longer than wide, and its sides are nearly straight: those of the female are broadly rounded anteriorly, and the disc is anteriorly a little more convex than in *M. dorsalis*. The under surface of the thorax and prosternum is more or less varied with blackish piceous.

12. *M. dorsalis*, testaceus, subtiliter parce pubescens, capite nigro, thorace latitudine longiore, antice angustato et lateribus rotundato, minus dense punctato, linea dorsali fusiformi nigra, elytris striis profundis punctatis, interstitiis parce punctulatis, macula utrinque elliptica ante medium, fasciaque pone medium angulata nigris, postpectore abdomineque nigro-fuscis. Long. .23—.27.

Elyter dorsalis Say, Journ. Acad. Nat. Sc. 3, 167.

Cryptohypnus dorsalis Germ. Zeitschr. 147.

A very common species, sufficiently distinct from all its allies by the distinct, distant punctures of the thorax.

13. *M. amabilis*, testaceus, subtiliter parce pubescens, capite nigro, thorace latitudine longiore, antice angustato et lateribus rotundato, sat dense punctato, linea dorsali fusiformi nigra, elytris striis sat profundis punctatis, interstitiis parce punctulatis, sutura antice, macula utrinque elongata, fasciaque postica angulata nigris. Long. .18.

Maryland, Prof. Adams. This beautiful little species is a miniature of *M. dorsalis*, and only differs by the thorax being more densely punctured, and a little more convex: the suture is blackish near the scutellum, and the spot shows a disposition to be prolonged to the posterior band, neither of which characters is seen in *M. dorsalis*. In two specimens the under surface is testaceous, in a third the postpectus and abdomen are dusky.

14. *M. lepidus*, testaceus, subtiliter pubescens, capite nigro, thorace latitudine sesqui longiore, antice vix angustato, angulis posticis divaricatis, confertim minus subtiliter punctato, linea tenui dorsali fusca, elytris striis profundis punctatis, interstitiis parce punctulatis, sutura angustissime, vittaque angusta versus apicem cum sutura confluyente fuscis, hac sæpe obsoleta. Long. .18.

Two specimens, Georgia. The colour beneath is uniform, pale, testaceous. This species is less shining than the others, and more elongate in its form: the long densely punctured thorax, not narrowed in front, hardly rounded on the sides, and slightly narrowed before the divergent posterior angles will readily distinguish it.

HEMIRHIPUS Latr.

1. *H. fascicularis*, niger, dense fusco-cinereo-pubescens, thorace latitudine longiore, antrorsum modice angustato, lateribus rufescentibus late rotundatis, sat grosse punctato, basi medio breviter ele-

vato, elytris striis punctatis, interstitiis punctulatis alternatim paulo elatioribus, lineis undatis apiceque fuscis. Long. .75.

Germ. Zeitschr. 2, 272.

Elater fascicularis Fabr. Syst. El. 2, 222: Oliv. Ent. 31, 8; tab. 5, fig. 56: Herbst, Käfer, 10, 104; tab. 168, fig. 1.

Baltimore, North Carolina, Texas, extending into Mexico, and, according to authors, found also in South America. From the extensive range through which it occurs in North America, it is scarcely to be supposed that this insect, though rare with us, has been introduced.

CRYPTOHYPNUS *Esch. (emend.)*

This genus is here restricted to such species as have the prosternum broader in the middle than at either end: the lateral suture is consequently convex outwards: the coxal plates are suddenly moderately dilated internally, but the tooth is not prominent: the tarsi are moderately short, and hispid with long bristles. Our species may form two groups.

A. *Prosternum lobo rotundato; palpi articulo ultimo triangulari.* Sp. 1—5.

1. *C. silaceipes*, olivaceo-niger, subtilius aureo-pubescens, fronte margine antico vix elevato, thorace antrorsum angustato, lateribus ante basin obtuse subangulatis, minus dense punctato, canaliculato, elytris striis obsolete punctatis, interstitiis antennisque basi plus minusve testaceis. Long. .21—.27.

Germ. Zeitschr. 5, 139.

Common in the northern part of the United States. The golden hair is more dense each side at the apex of the elytra so as to show, in particular lights, the appearance of a faint spot. The elytra are sometimes dark testaceous: the punctures of the striæ are by no means obvious.

2. *C. lacustris*, subæneo-niger, nitidus, griseo-pubescens, fronte margine antico vix elevato, thorace antrorsum angustato, lateribus sat late rotundatis, parcius punctato, canaliculato, elytris striis impunctatis, interstitiis subconvexis, basi et apice indeterminate rufo-piceis, antennis basi pedibusque testaceis. Long. .19.

One specimen, Point Kewenaw, Lake Superior. The posterior angles of the thorax and the inflexed portion are dark testaceous. This species resembles the last, but is smaller, and the sides of the thorax are regularly rounded. From the next species it is distinguished by the thorax being distinctly narrowed in front.

3. *C. picescens*, piceo-testaceus, supra nigricans, griseo-pubescens, fronte margine antico vix elevato, thorace oblongo, antrorsum vix angustato, lateribus fere parallelis vix late rotundatis, parcius punctato, canaliculato, angulis posticis testaceis, elytris piceis margine dilutius, striis impunctatis, interstitiis subconvexis, antennarum basi pedibusque testaceis. Long. .20.

Three specimens from the north side of Lake Superior. This species is sufficiently distinct by the form of the thorax to be recognised without difficulty: as in the preceding species the fourth joint of the antennæ is a little narrower than the following.

4. *C. tumescens*, obesus, virescenti-ater, cinereo-pubescens, thorace convexo, antrorsum valde angustato, lateribus rotundatis, dense subtilius punctato, elytris striis vix obsolete punctatis, intersti-

tiis paulo convexis, pedibus flavo-testaceis, antennis piceis, articulis 2 et 3 æqualibus flavis, 4^{to} sequenti æquali. Long. .15.

One specimen, north shore of Lake Superior. The front is flat, with the anterior margin distinct: it is as finely punctured as the thorax. This species has very much the appearance of *Cardiophorus*, but the prosternal spine is long.

5. *C. squalidus*, depressus, fuscus, pube grisea subsquamosa minus dense vestitus, thorace dense grossius punctato, subaciculato, antrorsum subangustato, lateribus late rotundatis, elytris striis subtilibus, distinctis, punctatis, interstitiis planis confertim punctatis, antennis pedibusque flavis. Long. .33.

One specimen, San Jose, California. The lobe of the prosternum is longer than in the preceding species and more rounded: the general appearance is that of *Adelocera*. The anterior margin of the front is slightly elevated: the fourth joint of the antennæ is equal to the fifth.

B. Prosterno lobo subtruncato; palpi articulo ultimo obovali. Sp. 6—12.

6. *C. ornatus*, niger, parce griseo-pubescent, thorace latitudine longiore, antice valde angustato, ad basin paulo angustato, grossius dense aciculato-scabro, carinato, elytris striis exaratis, interstitiis convexis, fascia utrinque pone basin, maculaque transversa pone medium margine non attingentibus læte flavis, tibiis tarsisque testaceis. Long. .11—.16.

San Diego, California. June, abundant in wet sand. This species resembles the next, but the thorax is less elongate, and more suddenly narrowed in front: the scabrous punctuation is very much coarser: the anterior fascia of the elytra, although dilated externally, is never prolonged to the humerus: the femora appear to be always fuscous.

7. *C. pulchellus*, niger, opacus parcius pubescens, thorace latitudine sesqui longiore, antrorsum angustato, ad basin leviter angustato, lateribus latius rotundatis, subtilius confertissime aciculato, elytris striis exaratis, interstitiis convexis, fascia utrinque pone basin, extus ad humerum producta, maculaque transversa pone medium flavis, antennis basi femoribusque testaceis, tibiis tarsisque pallidioribus. Long. .11—.17.

Dej. Cat.; Germ. Zeitschr. 5, 142.

Elater pulchellus Linnæus, Faun. Suec. 745, et auctorum omnium cautorum.

Elater exiguus Randall, Bost. Journ. Nat. Hist. 2, 35.

Cryptohypnus guttatulus Melsheimer, Proc. Acad. Nat. Sc. 2, 214.

Massachusetts and New York. It is quite possible that this species has been introduced from Europe: it does not seem to occur far in the interior of the country. The fascia of the elytra is composed of a small internal, and an elongate external spot, reaching from the humerus nearly to the middle. Sometimes the elytra are testaceous, with a faint cloudiness behind the middle. In this and the preceding species, the lobe of the prosternum is large, and separated from the sternum by a strong transverse carina.

8. *C. guttatulus*, ater, nitidus pubescens, thorace antrorsum valde angustato, punctulato, elytris distincte striatis, interstitiis subconvexis, impunctatis, macula humerali, alteraque utrinque ante apicem antennæ pedibusque testaceis. Long. .12.

Melsheimer, Proc. Acad. Nat. Sc. 2, 214.

I have seen only a badly preserved Pennsylvanian specimen, in Dr. Melsheimer's collec-

tion. The lobe of the prosternum is short, and hardly deflexed, and not well defined from the rest of the sternum. This species seems to have been confounded by Dr. Melsheimer with the preceding: in fact his description agrees entirely with the preceding, except in the description of the spots of the elytra. I have, however, retained Dr. Melsheimer's name, as this specimen was placed as the type in his collection. It is quite possibly identical with *C. 4-pustulatus*, a European species, and may have become erroneously labelled as American. The state of the specimen, however, is very unsatisfactory.

9. *C. striatulus*, ater, minus convexus opacus, tenuiter cinereo-pubescent, thorace latitudine non longiore, antrorsum angustato, lateribus regulariter sat rotundatis, confertissime punctulato, linea dorsali lævi, elytris distincte striatis, interstitiis planiusculis dense rugose punctulatis, antennis pedibusque piceis, tibiis tarsisque subtestaceis. Long. .14.

Two specimens, Lake Superior. The lobe of the prosternum is short, broad, and well defined by a deep transverse impression: the last joint of the palpi is rounded at the extremity as in *C. pulchellus*.

10. *C. pectoralis*, piceus flavo-pubescent, thorace rufescente minus convexo, antice posticeque angustato, lateribus rotundato, punctulato, linea dorsali lævi, elytris vix obsoletissime striatis, confertim punctulatis, plaga utrinque a medio fere ad basin extensa, alteraque apicali flavo-testaceis, antennis pedibusque flavis. Long. .12.

Elater pectoralis Say, Trans. Am. Phil. Soc. 6, 173.

Middle States and Lake Superior, not rare. The lobe of the sternum is short, broad, and tolerably deflexed: the posterior angles of the thorax as in the following species are small, but the carina is distinct. Independently of colour, this species differs from the following by the thorax being much less convex, and by the traces of striæ visible on the elytra. When the spots of the elytra are large, the latter appear yellow, with the margin, suture and posterior fascia, blackish. Specimens occur in which the thorax is black, and the spots of the elytra obsolete.

11. *C. obliquatulus*, nigro-piceus, punctulatis, cinereo-pubescent, thorace convexo, antice posticeque angustato, lateribus magis rotundatis, elytris versus apicem testaceis, macula utrinque obliqua ad medium alba signatis, antennis pedibusque flavis. Long. .10—.11.

Melsheimer, Proc. Acad. Nat. Sc. 2, 214.

Pennsylvania. Messrs. Melsheimer and Zeigler.

12. *C. futilis*, longiusculus pallide flavo-testaceus, albo-pubescent, capite piceo, thorace quadrato, antice posticeque vix angustato, lateribus late rotundatis, confertim rugose punctulato, linea dorsali lævi, elytris punctulatis, macula subscutellari, fasciaque pone medium infuscatis. Long. .08.

San Diego, California, in wet sand. This is the smallest species I have seen. The thorax is broadly rounded on the sides, and not very convex: the posterior angles are very minute, but the carina is distinct: the lobe of the prosternum is short, and defined by a transverse impression.

13. *C. inops*, piceus, cinereo-pubescent, thorace latitudine paulo brevior, convexo, antice posticeque subangustato, lateribus rotundatis, rugose punctulato, linea tenui dorsali lævi, macula magna dorsali testacea, elytris punctulatis, testaceis macula magna communi scutellari, fascia pone medium, suturaque late nigro-piceis, antennis pedibusque flavis. Long. .08—.09.

San Diego, California. This species in characters closely resembles *C. futilis*: besides the differences in colour, it is a little more robust; the carina of the posterior angles of the thorax is much more distinct, being one-third the length of the thorax, and is almost parallel with the margin.

To this genus belongs *Elater choris* Say, (Trans. Am. Phil. Soc. 6, 172:) it is apparently allied to *C. pulchellus*, but is larger, has the thorax covered with golden hair, and the elytra yellow with black bands.

E. nocturnus Esch. Thon. Arch. 2, 33: Mann. Bull. Mosc. 1843, 239; *C. musculus* Esch. ib.: Mann. ib.; and *C. littoralis* Esch. ib.: Mann. Bull. Mosc. 1846; all from North-Western America, are unknown to me.

C. cinereipennis Esch. and *C. puberulus* Mann. l. c. 240, do not belong to this genus, the tarsi being furnished with a lobe beneath.

Elater dorsalis Say, and *E. circumscriptus* Germ., referred by Germar (Zeitschr. 5, 146) to his second division of this genus, differ by their narrower prosternum, subacuminate mesosternum, and tarsi destitute of elongate setæ: the more convex and deflexed head gives them more resemblance to *Elater*, in general appearance, but from the elongate basal joint of the antennæ and other characters, I have placed them in *Monocrepidius*.

OEDOSTETHUS Lec.

Frons plana semicircularis, marginata, tenuiter canaliculata: labrum antice rotundatum: mandibulæ prominulæ parvæ obtusæ; antennæ longiusculæ, vix serratæ, articulo 1^{mo} obconico mediocri, 3^{io} sequenti non brevior 2^{do} sesqui longiore; 11^{mo} acuto, non constricto: prosternum antice brevissime lobatum, mucrone postico non inflexo, medio latius, sutura inde convexa, antice paulo exarata; mesosternum non protuberans: coxæ posticæ laminis subsubito parum dilatatis, vix dentatis: tarsi elongati, pubescentes, tenuissimi, articulis 1-4 sensim brevioribus, 5^{to} 1^{mo} longiore, unguiculis medio dente forti armatis.

A curious little subcylindrical elongated insect, having somewhat the appearance of a slender *Cardiophorus*, or some of the last described species of *Cryptohypnus*, with the thorax distinctly margined, and as much narrowed in front of the spines as at the apex; the sides are considerably rounded, and the disc convex; the posterior angles are small, acute, diverging and carinated; there are no basal fissures: the mandibles are more prominent than usual, but are not long and slender as in the *Cebrionides*.

1. *O. femoralis*, nigro-piceus, tenuiter cinereo-pubescent, thorace convexo, rotundato, latitudine longiore, subtiliter punctulato, angulis posticis parvis divergentibus, elytris confertim punctulatis, striis obsoletis, basi et versus suturam parum distinctis, antennarum articulis duobus, pedibusque flavis, his femoribus infuscatis. Long. .18.

One specimen found in Missouri Territory, another from New Jersey, given me by Mr. Guex. The striæ of the elytra are very fine and impunctured; except at the base, and towards the suture, they can scarcely be seen. The head is punctulate like the thorax; the margin is very slightly reflexed, and the impressed frontal line is not abbreviated, although not deep.

ADELOCERA Latr.

1. *Antennæ articulo 3^{io} secundo longiore.**a. Sulci antennarum integri.*

1. *A. impressicollis*, fusco-brunnea, opaca, pilis depressis luteis minus dense vestita, thorace oblongo, obsolete canaliculato, disco postice utrinque subfoveato, sat dense punctato, angulis posticis planis subdivergentibus, elytris dense subseriatim punctatis, sulcis tarsalibus obsoletis. Long. .36—.47.

Elater impressicollis Say, Ann. Lyc. 1, 260; Tr. Am. Phil. Soc. 6, 182.

Elater lepturus Say, Trans. Am. Phil. Soc. 6, 182 (var. obscurior.)

Adelocera senilis Germ. Zeitschrift für Entom. 2, 259.

Middle, Western, and Southern States. Between the descriptions given by Say, I can find no characters for considering his *El. lepturus* as distinct: the name itself was preoccupied by Herbst. The antennæ of this species are longer than in the next, and the joints are hardly transverse.

2. *A. pennata*, nigra, opaca, thorace oblongo, canaliculato, postice utrinque foveato, punctato, lateribus late, capiteque fulvo-squamosis, squamis angustis, elytris confertim punctatis, sulcis tarsorum plus minusve distinctis. Long. .33—.43.

Germar, Zeitschr. 2, 258.

Elater pennatus Fabr. Syst. El. 2, 239; Herbst, Käfer, 10, 52, tab. 162, fig. 9.

Elater discoideus Weber, Obs. Ent. 77; Say, Trans. Am. Phil. Soc. 6, 181.

Elater cruentus Oliv. Ent. 31, tab. 4, fig. 42.

Middle and Southern States, not rare. The date of Weber's name is equal to that of Fabricius', but the latter is generally adopted.

3. *A. aurorata*, nigra, opaca, squamis subaureis conspersa, thorace oblongo, confertim punctato, profunde canaliculato, angulis posticis planis divergentibus, elytris confertim punctatis, parcius squamosis, subtus cinereo-pubescentis, tarsis rufis, sulcis tarsorum modice profundis. Long. .54.

Elater auroratus Say, Trans. Am. Phil. Soc. 6, 181.

The typical specimen from New Hampshire was kindly loaned me by Dr. Harris. This species resembles, in form and general characters, the next, but is abundantly distinct.

4. *A. marmorata*, nigra, subopaca, squamis luteis angustis irregulariter maculata, thorace oblongo, profunde canaliculato, confertim punctato, angulis posticis planis subdivergentibus, elytris dense subseriatim punctatis, sulcis tarsorum anticorum profundis. Long. .6—.7.

Germ. Zeitschr. 2, 258.

Elater marmoratus Fabr. Syst. El. 2, 227; Herbst, Käfer, 10, 124; Say, Tr. Am. Phil. Soc. 6, 180.

Southern States, not rare.

b. Sulci antennarum postice abbreviati.

5. *A. oblecta*, nigra, squamis pallidis ellipticis irregulariter vestita, thorace oblongo, punctato, fortiter canaliculato, versus latera depresso, angulis posticis valde divergentibus, elytris disperse punctatis, vix obsoletissime striatis, costa utrinque obsoleta usque ad medium extensa: sulcis tarsorum nullis. Long. .6.

Elater oblectus Say, Trans. Am. Phil. Soc. 6, 181.

Maine and Vermont. The antennæ are moderately long, the second joint is much smaller than the third, and the following are transverse, as is usual in this genus. The pectoral grooves end suddenly near the anterior coxæ.

6. *A. brevicornis*, nigra, opaca, squamis fulvis vel pallidis et nigris ellipticis irregulariter variegata, dense punctata, thorace breviusculo, inæquali, postice angustiore, late profunde canaliculato, antice valde bifoveato, angulis posticis compressis, elevatis, apice inflexis, elytris fascia postice obliqua interrupta densius squamosa; antennis thorace triplo brevioribus. Long. .55—.70.

Lake Superior. This species seems to be very similar to *A. conspersa Germ.*, but the posterior angles of the thorax are not carinated, though compressed and elevated by the excavation of the basal part of the thorax each side. The antennæ are remarkably short, the joints are strongly transverse, and the second joint, though narrower, is not shorter than the others.

2. *Antennæ articulo 3^{io} secundo æquali.*

7. *A. mucorea*, nigra, dense sordide pubescens, fusco-variegata, thorace subcanaliculato sat dense punctato, antrorsum angustato, basi truncato, angulis posticis divergentibus, elytris striis punctatis vix impressis, interstitiis subtilius confluentur punctatis, antennis rufo-piceis. Long. .55.

One specimen, Georgia. Similar in form to the following species, but very different in characters.

8. *A. curtus*, nigro-picea, parce subtiliter squamosa, thorace cribratim punctato antrorsum angustato, lateribus rotundatis antice crenatis, angulis posticis rectis, elytris punctis transversis seriatim positis, interstitiis striis non latioribus, parce obsolete punctulatis, antennis pedibusque rufo-testaceis. Long. .43.

Georgia. This species is *Agrypnus curtus* of Dejean's catalogue, and resembles very closely the next, but is distinguished by the greater size of the punctures which compose the striæ of the elytra: the body is very coarsely punctured beneath, and, as in the next species, is thinly clothed with depressed small scale-like yellow hairs.

9. *A. rectangularis*, picea, parce subtiliter luteo-squamosa, thorace cribratim punctato, antrorsum angustato, lateribus rotundatis, antice crenatis, angulis posticis rectis, elytris punctato-striatis, interstitiis striis latioribus, parce obsolete punctulatis, antennis pedibusque testaceis. Long. .33—.38.

Elater rectangularis Say, Ann. Lyc. 1, 263; Trans. Am. Phil. Soc. 6, 182.

Missouri Territory, abundant. The pectoral grooves for the anterior tarsi are almost obsolete: in the preceding they are more distinct, while in *A. mucorea*, they are altogether wanting: the elytra of the female are slightly dilated behind the base, and are more obtusely rounded towards the tip than in the male.

To this genus, and to the first division, probably belongs the *Elater operculatus* mentioned by Say, as described in the Annals of the Lyceum: but as he has evidently misquoted himself, and no description bearing that name is found in his writings, it must be considered as unpublished: *Elater avitus* Say (Trans. Am. Phil. Soc. 6, 182) seems allied to *A. impressicollis*.

AGRYPNUS *Esch.*

1. *A. Sallei*, piceo-niger, subtiliter brunneo-pubescens, thorace latitudine longiore, antrorsum paulo angustato parum convexo, confertim punctato, lateribus antice paulo rotundatis, postice extrorsum curvatis, angulis posticis inde divaricatis, carina angulari subtili elongata margini parallela, linea

dorsali obsoleta lævi, basi ad medium acute tuberculata, elytris postice acutis, dense punctulatis, striis tenuibus punctulatis. Long. .85—1.10.

This species was discovered by Mr. A. Sallé near New Orleans, and kindly given me by Mr. Guex. It agrees so closely with the descriptions and figures of *A. fuscipes* *Fabr.*, that I supposed it to be that species, imported accidentally from the East Indies. Recently, however, Mr. Schott, of the Mexican Boundary Commission, has found it in abundance on the lower Rio Grande, at Eagle Pass. Between the punctures of the elytra may be perceived small transverse rugosities: the smooth dorsal line of the thorax is very indistinct, and is visible only near the base; the basal tubercle is large and almost reclivate.

2. *A. Schottii*, piceo-niger, subtiliter brunneo-pubescent, thorace latitudine vix brevior antrorsum angustato, convexo, lateribus rotundatis, angulis posticis subdivergentibus, carina elongata subtili margini parallela, confertim punctato, linea dorsali indistincta lævi, basi ad medium tuberculata, elytris postice acutis, dense punctulatis, striis subtiliter punctatis. Long. 1.07.

I have named this fine species after Mr. Schott, as a slight tribute to the scientific zeal displayed while attached to the Boundary Commission under Majors Graham and Emory; a single specimen was procured on the lower Rio Grande. The sculpture is as in the preceding, from which this species differs in the form of the thorax. It exactly resembles in appearance the Egyptian *A. notodonta* *Latr.*

Pyrophorus Illiger.

1. *P. physoderus*, piceo-fuscus, pubescens, thorace latitudine longiore antrorsum modice angustato, lateribus late rotundatis, confertim punctato, antice convexo, vesiculis mox ante angulis posticis positus, elytris dense punctulatis, striis punctatis, apice non mucronata, antennis thorace vix longioribus articulo 3^o secundo sesqui maiore. Long. .75.

Germ. Zeitschr. 3, 36.

For a specimen found in Louisiana, I am indebted to Mr. Guex. The little tubercle of the middle of the base of the thorax is quite prominent.

Aphanobius Esch. (emend.)

This genus should be restricted to those species having the last joint of the antennæ deeply constricted, the front slightly concave and not margined in front; the mesosternum prominent; the plates of the posterior coxæ somewhat suddenly slightly dilated, and emarginate posteriorly, and the internal tooth sharp, and moderately large: the tarsi are somewhat inflated beneath, and very densely pubescent, (being in this respect precisely as in *Agrypnus fuscipes*.) The first joint of the antennæ is moderately elongated, the second and third small, the fourth and following strongly triangular, and equal: the suture of the prosternum is bent outwards posteriorly, and is very deeply marked: the first joint of the tarsi is hardly as long as the second and third united: the base of the thorax has a slight elevation in front of the scutellum, but it is by no means obvious: the posterior angles have a short carina: there are no apparent basal fissures.

1. *A. infuscatus*, niger, dense breviter fusco-pubescent, thorace convexo latitudine longiore,

lateribus parallelis apice rotundatis, sat dense punctato, elytris a basi angustatis, apice mucronatis, sat dense punctatis, vix obsoletissime striatis. Long. 1·10.

Germ. Zeitschr. 5, 183.

Pristilophus? sordidus Mels. Proc. Acad. Nat. Sc. 2, 216.

Southern States, not common. It is strange that Germar should not have recognised the relation with certain species placed by him in *Pristilophus*. The resemblance in the form of the thorax gives the insect somewhat the appearance of a gigantic *Dolopius*.

MELANACTES *Lec.*

Frons depressa, antice rotundata, vix marginata; antennæ serratæ, articulo 2^{ndo} parvo, 3^{io} sequente paulo longiore non dilatato, 11^{mo} non maiore apice constricto: labrum antice rotundatum: mandibulæ breves, apice acutæ, pone apicem unidentatæ; palpi articulo ultimo non longiore triangulari: prosternum elongatum, antice longius lobatum, postice fortius mucronatum, mucrone compresso non inflexo, lateribus rectis, sutura antice paulo excavata: mesosternum utrinque prominulum: coxæ posticæ laminis angustis intus sensim paulo dilatatis: tarsi mediocres, tenues, compressi, pubescentes, subtus densissime breviter spongioso-pubescentes; articulis 1—4 sensim brevioribus, 5^{to} longiore unguiculis simplicibus.

These are large, shining, black insects, forming the first division of the genus *Pristilophus*, as defined by Germar, (Zeitschr. 4, 82.) Notwithstanding the care taken by the author, the description of the genus fails entirely when applied to the species here alluded to, since they belong to a totally different group of Elaters, from that in which *Pristilophus* was placed: the tarsi, indeed, so far from being uniformly pubescent above and below, as in *Corymbites*, are thinly pubescent above, and furnished with a very dense brush beneath, as in *Alaus*: the peculiarity in the form of the mesosternum was pointed out by Germar, and was, in fact, the character upon which he arranged his species in two divisions. The thorax in all the species is strongly margined: the base is without any fissure and is bidentate in the middle: the posterior angles are carinated.

As the characters of this genus are completely at variance with those laid down for *Pristilophus* both by Latreille and Germar, it would obviously be absurd to retain the name for the species here included, even if, after examination, we have found it necessary to place the remainder of Germar's *Pristilophus* in *Corymbites*.

1. *M. procerus*, niger nitidus, thorace subtransverso, ad medium latiore, lateribus valde rotundatis, angulis posticis divergentibus, subtilius punctato, densius ad latera, elytris subtiliter seriatim punctatis, interstitiis subtilissime parce punctulatis. Long. 1·3.

One specimen, from Mr. Hentz' collection; Prof. Haldeman. This species resembles in characters *M. piceus*, but the difference in the form of the thorax is very great. The thorax is a little wider than long, very slightly convex, considerably rounded on the sides, so as to be wider at the middle than immediately at the base of the spines, which thus appear to diverge more strongly than in the other species: the punctures are, as in *M. piceus*, small, and more dense on the sides than on the middle of the disc: there is an impressed dorsal line behind the middle. The elytra are slightly compressed on the sides behind the base: they are punctured as in *M. piceus*, and as in that species, the outer striæ of punctures are more distinct. Beneath, the prosternum and inflexed part of the prothorax are coarsely punctured: the metasternum is nearly smooth in the middle, sparsely and finely

punctured at the sides: the abdomen is densely and finely punctured, the last joint has a few larger setigerous punctures each side near the tip.

2. *M. piceus*, niger nitidissimus, thorace a basi antrorsum subangustato, latitudine longiore, lateribus antice rotundatis, subtilius punctato, densius ad latera, elytris subtiliter seriatim punctatis, interstitiis subtilissime parce punctulatis. Long. .9—1.2.

Elater piceus De Geer, Ins. 4, 162, tab. 18, fig. 3, (1775.)

Elater lævigatus Fabr. Ent. Syst. emend. Suppl. 138, (1798:) Syst. El. 2, 225: Herbst, Käfer, 10, 45.

Elater morio (var.) Say, Trans. Am. Phil. Soc. 6, 165.

Pristilophus lævigatus Germ. Zeitschr. 4, 84.

Pristilophus femoralis Melsheimer, Proc. Acad. Nat. Sc. 2, 216.

Middle, Southern and Western States, abundant. The antennæ and feet are described as fuscous by all the authors: the latter appear to me to be black, with the tarsi brownish piceous: the antennæ are dull black, becoming brownish towards the tip. These are, however, characters of no importance, as they are the same in all the species.

A specimen from Missouri Territory has the punctures of the thorax and of the elytral series much larger, but otherwise presents no difference.

One specimen from York Co., Pennsylvania, given me by the Rev. D. Ziegler, in form and sculpture agrees exactly with the others, except that the thorax, instead of being sparsely, is quite densely punctured: the punctures at the sides are so close as to become confluent; towards the middle of the base they are finer and more distant: the dorsal line is more deeply impressed than usual. From the next species, this variety is distinguished by the sides of the thorax converging from the base, and by the posterior angles being subacute, as in the preceding species, the lateral margin being slightly dilated, so as to compress the elevated ridge.

3. *M. densus*, ater, nitidus, thorace latitudine non longiore, lateribus parallelis antice rotundatis, confertim, lateribus confluentem punctatis, elytris seriatim punctatis, interstitiis punctulatis et rugosis. Long. .85—.95.

Specimens collected in California by Mr. Pease and Mr. Child. Brownish black, shining: head densely punctured; antennæ with the last joint more obtuse than in the other species: palpi black: thorax not longer than wide; sides margined as usual, parallel, rounded from the anterior third to the tip: posterior angles not divergent, with the elevated ridge broader and more obtuse than in *M. piceus*; disc densely moderately finely punctured; punctures confluent at the sides, less dense but not finer towards the middle of the base; dorsal line very short, almost obsolete: elytra, with series of punctures, as in *M. piceus*, the outer series being more distinct; interstices tolerably densely punctate, and more densely finely rugous than in the preceding species. Beneath, as in *M. piceus*.

4. *M. morio*, niger, nitidus, thorace latitudine longiore, a basi subangustato, lateribus antice rotundatis, lateribus confertim medio minus dense punctato, elytris striis profundis crenatis, interstitiis convexis parce punctulatis, subrugosis. Long. .90—1.06.

Elater morio Fabr. Ent. Syst. emend. Suppl. 138: Syst. El. 2, 225: Herbst, Käfer, 19, 28; tab. 160, fig. 7: Say, Trans. Am. Phil. Soc. 6, 165.

Elater lacunosus Fabr. Syst. El. 2, 224.

Pristilophus morio Germ. Zeitschr. 4, 85.

Middle and Southern States, rare. *E. lacunosus*, as observed by Germar is undoubtedly a variety, having abnormal impressions on the thorax.

5. *M. puncticollis*, niger, nitidus, thorace latitudine longiore, a basi antrorsum subangustato, lateribus antice rotundatis, confertim, disco minus dense punctato, elytris striis fortius punctatis, interstitiis leviter convexis, distinctius punctulatis. Long. .75—.9.

Pristilophus puncticollis Lec. Proc. Acad. Nat. Sc. 6, 68.

Missouri Territory, abundant. This species agrees in characters with the preceding, but is usually smaller, with less deep elytral striæ, and less convex interstices.

6. *M. consors*, latiusculus, niger, thorace latitudine non longiore, lateribus rotundatis, ad medium sublatis, confertim punctato, paulo remotius in disco, elytris striis punctatis, interstitiis leviter convexis, punctulatis et rugosis. Long. .88.

One specimen, Nebraska. Differs from the preceding by its less shining colour, broader form, and more densely punctured thorax. Body black, not very shining; head densely punctured; antennæ reaching a little beyond the middle of the thorax; thorax not longer than wide, at the middle as wide as at the posterior angles, which from the slight narrowing of the base appear divergent; sides broadly rounded, strongly margined: disc densely punctured, punctures a little more distant at the middle, dorsal line not distinct, somewhat smooth. Elytra scarcely perceptibly narrower than the thorax, more obtusely rounded posteriorly than in the two preceding species; striæ well defined, strongly punctured; interstices slightly convex, finely punctulate and rugous.

7. *M. Reichei*, niger nitidus, pube brevissima grisea depressa vix conspicua vestitus, thorace latitudine longiore, medio vix latiore, lateribus rotundatis, confertim, lateribus confluentius subtilius punctato, postice canaliculato, elytriis striis fortius punctatis, interstitiis parum convexis, rugosis. Long. .90.

Pristilophus Reichei Germ. Zeitschr. 4, 85.

One specimen, Georgia. Easily distinguished by the fine short gray hairs which proceed from the punctures: the thorax is more convex than in any of the other species. Germar describes the interstices of the elytra as flat, but in my specimen they are slightly convex, as in the two preceding species.

CHALCOLEPIDIUS *Esch.*

1. *C. viridipilis*, elongatus, niger, pilis minutis squamiformibus olivaceis dense tectus, thorace elongato, subtilissime punctulato, angulis posticis vix divergentibus, scutello obovato, antice obtuso, elytris striis profundis punctatis, interstitiis parce punctulatis, antennarum articulo 3^{io} parvo, apice acuto. Long. .90.

Elater viridipilis Say, Ann. Lyc. 1, 257; Trans. Am. Phil. Soc. 6, 166.

Middle and Southern States, rare. The antennæ of the male are pectinate, those of the female are strongly serrate. This species must resemble very closely the Brazilian *C. prasinus* *Erichson* (Germ. Zeitschr. 3, 85;) but that species is described as having the thorax finely, tolerably densely punctured, and the scutellum bicuspid anteriorly. Should they prove identical, Say's name has priority.

ALAUUS Esch.

1. *A. oculatus*, niger, nitidus, pilis albidis irregulariter maculatus, thorace convexiusculo, disco utrinque macula magna elliptica nigro-sericea albo-marginata ornato. Long. 1.25—1.7.

Eschscholtz, Thon Ent. Archiv., 1829; Germ. Zeitschr. 2, 275.

Elater oculatus Linné, Mus. Ubr. 81; Syst. Nat. 2, 651; Fabr. Ent. Syst. 210; Ent. Syst. emend. 2, 217; Syst. El. 2, 222; Oliv. 31, 11; tab. 3, fig. 34; Herbst, Käfer, 9, 327; tab. 157, fig. 7; Beauv. 213; tab. 9, fig. 4.

Common through the Atlantic portions of the United States, extending into México. A variety brought from Texas, by Lieut. Haldeman, has the sides of the thorax entirely covered with the white scales, which usually form only small spots: the eye-like spots are nearly round, and the white scales upon the elytra are more abundant. The thorax of the females is more decidedly narrowed in front, and more convex than that of the males.

2. *A. myops*, niger, nitidus, pilis cinereis irregulariter conspersus, thorace minus convexo, antice sublatiore, disco utrinque macula angusta elliptica nigro-sericea, cinereo-marginata ornato. Long. .95—1.8.

Eschscholtz, Thon Ent. Archiv. 1829; Germ. Zeitschr. 2, 275.

Elater myops Fabr. Syst. El. 2, 222.

Elater luscus† Oliv. 31, 12; tab. 6, fig. 64; Herbst, Käfer, 9, 329; tab. 157, fig. 8; Beauv. 213; tab. 9, fig. 5.

Middle States, rare; Southern States, abundant: found also in Oregon by Capt. Wilkes' Exploring Expedition. The confusion in the name of the species seems to have been introduced by Olivier applying to it a name given by Fabricius to a distinct species, not known in modern collections: the immaculate body, free from cinereous pubescence, and the absence of any margin to the eye-like spots of the thorax, will fully distinguish *E. luscus*, whenever it is found. Fabricius, with a carelessness which is but too frequent in his writings, then quotes Olivier's figure as belonging to his *E. luscus*, while on the preceding page he has already described the insect figured by Olivier, under the name of *E. myops*, and which is that by which the species is generally known. Beauvois and Herbst merely copy Olivier's error, considering it as sufficiently endorsed by Fabricius.

De Geer (Mem. 4, 159, tab. 17, fig. 28) describes a species under an uncouth Gallic name, which it is not necessary to repeat, and cites *E. oculatus* Linn. as a synonym: his figure, however, appears to represent the species now under consideration.

As there is no evidence that *Elater luscus* Fabr. is found within the limits of the United States, it is not safe to include it in our fauna.

CARDIOPHORUS Esch.

The truncate spine of the prosternum, fitting like a wedge into the prominent and deeply cleft mesosternum, will distinguish this group, which contains only one genus: the front is subangulated and margined, moderately convex, slightly impressed: the laminae of the posterior coxæ are suddenly dilated internally. The tarsi are not lobed in any species known to me, found in the United States.

A. *Tarsi et ungues simplices.* Sp. 1—11.

1. *C. erythropus*, elongatus, fusco-niger, cinereo-pubescent, thorace æqualiter fusco-cinereo pubescente, latitudine longiore, convexo, antrorsum angustato, postice breviter canaliculato, lateribus late rotundatis subtilissime punctulato, elytris striis subtilibus, fortius punctatis, interstitiis paulo convexis, pedibus antennarumque basi rufis. Long. .37—4.

Variat, antennis totis rufis.

Erichson, Germ. Zeitschr. 2, 293.

C. amictus Melsheimer, Proc. Acad. Nat. Sc. 2, 158.

? *Elater convexus* Say, Journ. Acad. Nat. Sc. 3, 169.

Middle and Southern States, not common. Distinguished from the next by the pubescence of the thorax being equal over its whole surface, and by the more distinct fine punctures with which it is covered; the posterior angles are more divergent in some specimens than in others. The elytra, as in the next, are somewhat pointed behind, with the interstices almost imperceptibly punctured. In the females the thorax is more parallel on the sides, and more suddenly rounded anteriorly.

2. *C. saturninus*, elongatus fusco-niger, cinereo-pubescent, thorace antice distinctius postice tenuissime cinereo-pubescente, antrorsum angustato, latitudine fere longiore lateribus rotundatis, confertissime subtilissime alutaceo-punctulato, postice breviter canaliculato, elytris striis subtilibus fortius punctatis, interstitiis paulo convexis, antennarum basi pedibusque rufis. Long. .35.

One specimen, South Carolina, Mr. Zimmerman. Except the differences above pointed out, this species has all the characters of the preceding. The punctures of the thorax are so fine and close, that the lustre is dull and bluish on that portion of the body.

3. *C. cardisce*, niger, subopacus, tenuiter pallide pubescens, thorace latitudine fere longiore, tumido, antrorsum angustato, lateribus rotundatis postice inflexis, confertim punctulato, striis basali-bus elongatis, exaratis, elytris ochreo bi-vel quadri-maculatis, postice acutis, striis profundis punctatis, interstitiis convexis dense punctulatis. Long. .28.

Elater cardisce Say, Trans. Am. Phil. Soc. 6, 169; Journ. Acad. Nat. Sc. 3, 169.

Middle States, on the sea shore. The anterior spots of the elytra are about the middle, the posterior about one-fourth from the apex; the latter form an angulated fascia. Sometimes the anterior spots are wanting, and sometimes the posterior: varieties probably occur with immaculate elytra.

4. *C. Dejeanii*, plumbeo-niger, dense cinereo-fusco-pubescent, thorace latitudine sublongiore convexo, dense punctulato, lateribus late rotundatis, elytris striis postice exaratis, interstitiis convexis, dense punctulatis, postice acutis, maculis duabus obsolete testaceis, pedibus piceis, tibiis tarsisque testaceis. Long. .25.

C. convexus†Erichson: Germ. Zeitschr. 2, 289.

One specimen, Georgia. Erichson, probably misled by Dejean's collection, has confounded this with *Elater convexus* Say, Journ. Acad. Nat. Sc. 3, 169: a very different species which, by description. (having rufous antennæ,) is nearly allied to *C. erythropus*. This species differs from the preceding by the thorax being longer, less rounded on the sides, and more densely pubescent.

5. *C. tumidicollis*, nigerrimus obesus, tenuissime cinereo-pubescent, thorace transverso, tumido, antrorsum angustato, lateribus valde rotundatis, angulis posticis non divergentibus, subtilissime punctulato, obsolete canaliculato, elytris striis punctatis, postice non exaratis. Long. .25.

One specimen, collected in Oregon by Dr. J. K. Townsend, and given me by Mr. Wilcox. Resembles the next, but is a much thicker species, with a more tumid thorax. Colour deep black, sprinkled with very fine whitish hairs: front very finely punctulate; margin slightly reflexed: thorax at its greatest breadth nearly one-half wider than long, strongly narrowed in front, and very much rounded on the sides, gradually narrowed for the posterior third, with the sides straight near the base: disc convex, very finely, almost imperceptibly punctulate, obsoletely channelled: basal striæ moderately short, deep: elytra about twice as long as wide, not wider than the widest part of the thorax, oval, slightly pointed behind: striæ finely punctured, not deeper posteriorly: interstices flat, scarcely perceptibly punctulate: feet black; claws diaphanous.

This species is perhaps related to *C. latiusculus* Esch. (Thon Ent. Arch. 2, 34,) but the pubescence of the thorax is not fuscous, nor are the knees ferruginous, as is required by the description of that species.

6. *C. convexulus*, niger, nitidus, tenuiter cinereo-pubescent, thorace latitudine brevior, tumido, antice valde angustato, postice parum angustato, lateribus rotundatis, angulis posticis non divergentibus, subtilissime punctulato, elytris striis punctatis, interstitiis dense punctulatis, subconvexis 6^{to} et 8^{vo} paulo elevatis, tibiis versus apicem, tarsisque rufescentibus. Long. .35.

Maine and Ohio, sent by Dr. Harris under the name adopted. Similar to the next species, but larger and more robust, with a much shorter thorax. The thorax is considerably less narrowed at the base than at the apex: the dorsal channel is very faint and short: the basal lines are short and well defined: the antennæ are entirely black, and a little longer than the head and thorax: the clypeus is more deeply concave than in *C. gagates*.

7. *C. gagates*, nigerrimus, tenuiter cinereo-pubescent, thorace latitudine sublongiore, tumido, lateribus rotundatis, angulis posticis divergentibus, dense subtiliter punctulato, basi breviter canaliculato, elytris striis punctatis, interstitiis paulo convexis, dense subtiliter punctulatis. Long. .24—28. Erich. Germ. Zeitschr. 2, 297.

Southern States, not rare. A specimen in Dr. Harris' collection is named *C. convexus* Say, but as the antennæ are black, it can by no means be referred to that species.

8. *C. tenebrosus*, plumbeo-niger, nitidus longiusculus, fusco subtiliter pubescens, thorace latitudine sublongiore, convexo, lateribus rotundatis, dense subtiliter punctulato, obsolete canaliculato, angulis posticis subdivergentibus, elytris dense punctulatis, striis punctatis, interstitiis leviter convexis, genubus femorumque basi rufo-piceis. Long. .28—32.

San Francisco, California. Nearly of the same form as the preceding, but with a less tumid thorax: the basal striæ of the thorax are a little longer: the rufous colour of the knees and trochanters is sometimes hardly perceptible.

9. *C. obscurus*, plumbeo-niger, opacus, dense fusco-pubescent, thorace latitudine non longiore, lateribus valde rotundato, convexo, confertissime subtilius punctato, postice subcanaliculato, angulis posticis divergentibus, elytris dorso subdepressis, striis punctatis, postice minus distinctis, interstitiis planis, dense punctulatis. Long. .25.

San Diego, California. Resembles the next species, but the feet are entirely black, and the thorax is less lustrous: the basal striæ of the thorax are very short, and the base is deeply and decidedly transversely impressed between them.

10. *C. lævicollis*, plumbeo-niger, subnitidus, dense fusco-pubescent, thorace latitudine non brevior, convexo, lateribus rotundatis, dense subtiliter punctulato, postice canaliculato, angulis posticis divergentibus, elytris dorso subdepressis, striis punctatis, interstitiis punctulatis, vix convexis, pedibus rufis, femoribus sæpe nigricantibus. Long. .28.

?Er. Germ. Zeitschr. 2, 300.

One specimen from New York, in which the anterior thighs alone are darker: another in the collection of Dr. Harris, having both thighs and tibiæ piceous. The palpi are black, and the posterior channel of the thorax is deep: these cannot, however, be constant characters. The basal striæ of the thorax are short, as in the preceding species. From the next species it differs by its less robust form, longer and less inflated thorax, and more distinct basal striæ. Erichson does not mention the slight flattening of the disc of the elytra.

11. *C. robustus*, plumbeo-niger, vel æneo-niger, minus elongatus, densius cinereo-pubescent, thorace latitudine brevior, convexo, subcanaliculato, lateribus rotundatis, dense subtiliter punctulato, angulis posticis vix divergentibus, elytris dorso subdepressis, striis punctatis, interstitiis planis, dense punctulatis, pedibus rufis, femoribus præcipue infuscatis. Long. .36.

Middle States. If it were not for the superior size, this might be considered as *C. lævicollis*, but the thorax is fully one-third wider than long, and more convex than in the preceding; the feet vary very much in colour; the antennæ are always entirely black; the palpi are sometimes black and sometimes brown. The only difference between this and the last is in size and form, and future researches may show that these variations are sexual in their character.

B. *Ungues ad medium unidentati: tarsi simplices.* Sp. 12—15.

12. *C. sufflatus*, piceus, subtiliter griseo-pubescent, thorace latitudine sublongiore, antice posticeque angustato, lateribus rotundatis, valde convexo, subalutaceo, parce punctulato, elytris striis distincte punctatis, interstitiis subplanis vix punctulatis, antennis palpis pedibusque flavis. Long. .20—.24.

Two specimens, San Diego, California. As in the other species of this division of the genus, the posterior angles of the thorax are longer than in the species above described, and project directly backwards: the basal striæ are tolerably long, but faint: the disc of the thorax is obsoletely channelled posteriorly: the elytra are more rounded at the humerus than in the other species, and are not wider than the thorax.

13. *C. inanus*, piceus, subtiliter griseo-pubescent, thorace latitudine sublongiore, antice posticeque angustato, lateribus rotundatis, valde convexo, subalutaceo, parce punctulato, elytris striis parvis punctatis, interstitiis planis, vix punctulatis, basi rufis, antennis piceis, pedibus flavis. Long. .15.

Two specimens, San Diego. Independently of size, distinguished by the piceous antennæ from the preceding, which it very much resembles in form: the striæ of the elytra are less impressed than in *C. sufflatus*: the thorax is rufo-piceous in one specimen.

14. *C. transfugus*, niger, subtiliter cinereo-pubescent, thorace latitudine sublongiore antice angustato, postice subangustato, lateribus rotundatis, valde convexo, subalutaceo, parce punctulato, basi biimpresso, elytris striis subprofundis subtilius punctatis, interstitiis subconvexis, piceis humeris late testaceis, pedibus antennisque flavis, his extrorsum fuscescentibus. Long. .18.

One specimen, San Jose, California. This species is allied to the next, but the thorax is much more rounded on the sides: the basal striæ are reduced to extremely short fissures, and the space around them is broadly and tolerably deeply foveate: the humeral spot is oblong, and its posterior limit badly defined, appearing inclined to form an obsolete vitta, extending nearly to the tip of the elytra; the suture is darker than the rest of the elytra.

15. *C. curiatus*, niger, nitidus, griseo-pubescent, thorace latitudine vix longiore, lateribus late rotundatis, modice convexo, parce punctulato, elytris rufo-flavis, sutura, fascia lata ad medium, marginique pone medium nigris, striis profundis, subtilius punctatis, interstitiis convexis parce punctulatis, antennis palpis pedibusque flavis. Long. .18.

Elater curiatus Say, Trans. Am. Phil. Soc. 6, 173.

Cardiophorus areolatus † Er. Germ. Zeitschr. 2, 320.

Middle and Southern States, sometimes quite abundant. The basal fissures are here merely oblong punctures, but there appear to be two on each side, placed very near together. Erichson seems to have placed great confidence in Dejean's determination (vide *C. nigrofasciatus* Dej. Cat. p. 104) in considering this species as *Elater areolatus* Say, to which it has no resemblance.

Div. 5. CEBRIONITES.

The genera here contained are considered by most systematic entomologists as constituting a peculiar family: and indeed on comparing any species of Cebrio with Elater, it is difficult to come to any other conclusion. The number of genera composing the supposed family is very small, and they are, moreover, rare in collections, so that but little opportunity is afforded for studying the differences in structure. Having been so fortunate as to discover in our country a species of the very interesting genus *Plastocerus*, recognised as entering this family, and two other genera still more closely allied to Elater, I have been convinced of the necessity either of restricting the family Cebriionidæ to the genus Cebrio alone, (with my genus *Scaptolenus*, as probably a division of it,) distinguished by the fifth ventral segment of the abdomen being truncate; or to place the family Cebriionidæ as now received by entomologists with the Elateridæ, making of it a division equal in value to the genuine Elaters, and distinguished by having the mandibles long, and prominent; from the other great group containing the Eucnemidæ, and which appears to osculate with the present division in Perothops, the genera here contained differ by the antennæ being widely separated as in Elater.

The characters then of the present division are as follows:

Caput porrectum, oculis liberis; mandibulæ elongatæ, porrectæ, sæpe tenues; labrum præcipue connatum; clypeus antice non dilatatus; antennæ distantes, in fossulis vix distinctis insertæ; prosternum non lobatum, sutura laterali præcipue indistinctum, mucrone postico in aliis distincto, in aliis

valde inflexo, et inde indistincto; coxæ anticæ et intermediæ præcipue maiusculæ, posticæ laminis intus sensim dilatatis; tarsi pubescentes, non lobati, unguiculis simplicibus: abdomen articulo 5^{to} in aliis rotundato, in aliis truncato.

Our genera may be thus arranged:

A. Abdomen articulo 5^{to} postice rotundato, sexto abscondito:

Antennæ filiformes; frons margine porrecto - - - - Aphricus.

Antennæ flabellatæ; frons non marginata:

Antennæ 11-articulatæ - - - - Plastocerus.

Antennæ 12-articulatæ - - - - Euthysanius.

B. Abdomen articulo 5^{to} truncato, 6^{to} conspicuo: antennæ subserratæ:

Tarsi mediocres, tibiæ anticæ apice paulo productæ - - - Cebrio.

Tarsi longissimi, tibiæ anticæ bidentatæ - - - Scaptolenus.

APHRICUS *Lec.*

Frons concava, antice subrotundata prominula; labrum brevissimum, sub fronte absconditum: mandibulæ elongatæ falcatæ tenues: palpi articulo ultimo vix dilatato: antennæ vix serratæ, articulis 2 et 3 coniunctis 4^{to} æqualibus, (ultimo?); prosternum quadratum, lateribus rectis, antice truncatum, non lobatum, at linea transversa impressum, postice subito inflexum (non mucronatum?): coxæ intermediæ parvæ paulo distantes: posticæ valde obliquæ, laminis intus sensim paulo dilatatis: tarsi longiusculi, pubescentes, setosi, articulis 1—4 subæqualibus, 5^{to} duplo longiore unguiculis integris: tibiæ omnes tenues, calcaribus parvis: abdomen 5-articulatum.

A small insect having very much the appearance of a slender cylindrical *Cardiophorus*, but by its long mandibles, and very short labrum, evidently belonging to the present group: the head is exserted, and the eyes are moderately prominent: the thorax is as long as it is wide, rounded on the sides, narrowed slightly towards the posterior angles, which are diverging and slender; the lateral margin is not apparent; the scutellum is emarginate in front, and acute behind; the elytra are scarcely wider than the thorax, and nearly parallel on the sides. The prosternum posteriorly is suddenly inflexed so much, that I am unable to see if it is mucronate at tip; the mesosternum, however, is visible between the middle coxæ, and appears concave in its deepest part; the middle coxæ are smaller than in the other genera of this group, and are visibly separated. The posterior coxæ are also divergent at their inner tip, as in the genuine *Elateridæ*; while in the following genera they lie close together.

The name is derived from *αφρικος* (*α* et *φριξ*) quasi *mutus*.

1. *A. californicus*, nigro-piceus, griseo-pubescent, capite scabro-punctato, thorace convexo, quadrato, lateribus rotundato, subtiliter punctulato, angulis posticis valde divergentibus, elytris striis punctatis, interstitiis punctulatis, 5^{to} pone medium leviter carinato, antennis pedibusque piceis. Long. .25.

One specimen, San Diego, California. The striæ of the elytra are deeper towards the base, so that the interstices are there slightly convex; posteriorly the striæ become merely rows of oblong points; the elevation of the fifth interstice behind the middle is altogether anomalous, and reaches quite to the apex.

PLASTOCERUS † *Schaum.*

Frons planiuscula, antice sensim deflexa, non marginata: oculi convexi prominuli: labrum transversum antice rotundatum, cum fronte arcute connatum: mandibulæ longiusculæ, minus tenues, vix acutæ: palpi articulo ultimo vix longiore cylindrico: antennæ pilosæ, flabellatæ, 11-articulatæ, articulo 1^{mo} crassiore; 2—10 gradatim paulo longioribus, 4—10 ramo externo cylindrico valde elongato apicali instructis; 11^{mo} ramo præcedentis longiore, cylindrico: prosternum antice vix rotundatum, postice longe mucronatum: coxæ anticæ parvæ, mediæ maiusculæ contiguæ, posticæ laminis angustis intus paulo latioribus: tarsi longiusculi, pubescentes, articulis 1—4 sensim brevioribus, 5^{to} longiore unguiculis integris: tibiæ tenues calcaribus minutis: abdomen 5-articulatum.

A specimen of this insect was sent by me to Dr. Schaum, who pronounced it strictly congeneric with *Callirhipis angulosus Germ.*, an insect found in Smyrna, and which forms in the 'Catalogus Coleopterorum Europæ the type of the unpublished genus *Plastocerus*.

The characters are very distinct, as given above; the general form of the body is that of *Cebrio*, but more slender; the mandibles are shorter and less acute than in the other genera of this group, and close together just beyond the labrum, so as to leave no open space as in *Aphricus* and *Cebrio*; the labrum is closely soldered to the front, as in *Cebrio*, leaving merely a transverse line; the small size of the anterior coxæ shows the persistence of the *Elater* type. The abdomen, though apparently only 5-jointed, is slightly dehiscent at the apex, permitting the sixth internal joint to be seen.

1. *P. Schaumii*, piceo-castaneus, helvo-pubescent, capite thoraceque pilis longioribus erectis densius vestitis, illo scabro, hoc antrorsum angustato, lateribus sinuatis, angulis posticis elongatis, divergentibus, dense punctato, elytris striis vage impressis, interstitiis subrugosis, pectore longius cinereo-pubescente. Long. .47.

San Diego, California, May and June, abundant, flying about just before sunset, and alighting on bushes, near the shore of the bay. In the male, the thorax is gradually narrowed from the base, and slightly angulated before the middle; in the female, the sides are parallel from the base of the spines to the middle, then rounded to the apex. This insect has very feebly the power of springing.

EUTHYSANIUS *Lec.*

Frons planiuscula, antice subito devexa, non marginata: oculi convexi prominuli: labrum breve, antice subsinuatum: mandibulæ modice elongatæ, acutæ, medio dentatæ: palpi articulo ultimo non longiore, cylindrico: antennæ pilosæ flabellatæ, 12-articulatæ, articulo 1^{mo} crassiore, sequentibus duobus æquali; 3^o 2^{do} paulo longiore; 4—11 sensim paulo longioribus, ramo externo valde elongato, cylindrico apicali instructis, 12^{mo} cylindrico, ramo præcedentis sesqui brevior: prosternum antice vix rotundatum, sutura laterali obliqua recta, postice mucronatum: coxæ anticæ parvæ, mediæ fere contiguæ, posticæ laminis angustis, intus latioribus: tarsi longiusculi pubescentes, articulis 1—4 sensim brevioribus, 5^{to} longiore, unguiculis integris: tibiæ tenues, calcaribus parvis: abdomen 5-articulatum.

The appearance is entirely that of *Plastocerus*, but the 12-jointed antennæ, and the more prominent and acute mandibles, compel me to separate this species. The labrum is more porrected than in the preceding genus, and is nearly horizontal, not following the convexity of the anterior part of the front, which is almost perpendicular.

1. *E. lautus*, piceo-castaneus, tenuiter helvo-pubescent, capite thoraceque sat dense punctatis, hoc latitudine non brevior, antrorsum paulo angustato, lateribus late sinuatim rotundatis, angulis posticis elongatis valde divergentibus, elytris thorace paulo latioribus, seriatim punctatis, vage subsulcatis, rugose punctatis, antennis palpis pedibusque castaneo-rufis. Long. .92.

One specimen from San Diego, California. The shallow furrows of the elytra are more obvious behind the middle.

CEBRIO *Fabr.*

Frons paulo convexa, antice non marginata: oculi convexi prominuli: labrum latum, breve, antice præcipue late emarginatum, fronte arcte connatum: mandibulæ elongatæ fere rectangulariter angulatæ, apice tenues acutæ: palpi maxillares longiusculi, articulis cylindricis: antennæ subserratæ, 11-articulatæ, articulo 1^{mo} non crassiore, 4^{to} æquali; 2 et 3 coniunctis 4^{to} æqualibus; 11^{mo} apice subito constricto: prosternum breve, sutura laterali indistincta, postice longe mucronatum: coxæ anticæ maiusculæ, mediæ contiguæ, posticæ laminis intus subito dilatatis: tibiæ anticæ ad apicem extus paulo productæ, calcaribus mediocribus: tarsi paulo pubescentes longiusculi, articulo 1^{mo} elongato, 2—4 subæqualibus, 5^{to} longiore, unguiculis integris: abdomen articulo 5^{to} truncato, 6^{to} 7^{mo}que conspicuis.

This genus is distinguished from the next by the anterior tibiæ being less compressed and not emarginate externally; the terminal spurs of all the tibiæ are moderate, while in *Scaptolenus*, they are very long; the scutellum is obtuse and not elongate. The species resemble each other very closely, and are only to be recognised by the organic differences pointed out below: they are castaneous above, and testaceous yellow below, with the prosternum dusky, and the antennæ ferruginous. Latreille has separated *C. bicolor* as a distinct genus *Selenodon*, but such an arrangement is not tenable.

A. *Palpi articulo ultimo maxillarium brevior.*

1. *C. bicolor*, castaneus, helvo-pubescent, minus nitidus, labro late emarginato, thorace lateribus parallelis antice rotundatis, (maris confertim, feminæ parcius punctato,) angulis posticis subdivergentibus, elytris striatis, interstitiis punctatis, subtus testaceus, antennis ferrugineis. Long. (mas,) .7: (fem.) .9.

Cebrio bicolor Fabr. Syst. El. 2, 14; Beauvois, Ins. 8, tab. 7, fig. 2.

Selenodon bicolor Latreille, Ann. Ent. Soc. France, ser. 1, 3, 163.

Southern and Western States, not rare. The female is apterous, and larger and stouter in its form; the antennæ are only as long as the head and mandibles, while in the male they reach beyond the base of the thorax; they are serrate in both sexes, with the last joint acuminate: the only specimen of the female that I have seen, was taken in Alabama by Mr. Hentz, and given me by Prof. Haldeman. In both sexes the apical portion of the mandibles is slender: in the female the tarsi are shorter than in the male, and the anterior tibiæ are more compressed.

As this seems to be the most abundant species, it is probably the original *Cebrio bicolor*.

2. *C. simplex*, piceo-castaneus, helvo-pubescent, labro non emarginato, thorace antrorsum subangustato, lateribus fere rectis (maris confertim fere confluentem punctato) angulis posticis subdivergentibus, elytris nitidis profundius striatis, interstitiis punctatis, subtus testaceus, antennis ferrugineis. Long. .72.

One male from Georgia. The antennæ are a little longer than the head and thorax: besides the differences given in the diagnosis, the thorax is more densely pubescent than in the other species, and its posterior angles are more strongly carinated.

B. Palpi maxillares articulo ultimo præcedenti æquali.

3. *C. confusus*, piceus, helvo-pubescent, labro antice late emarginato, thorace lateribus parallelis, antice subrotundatis, angulis posticis breviusculis, non divergentibus (maris confertim subtilius punctato,) elytris minus nitidis, striatis, interstitiis punctatis, subtus testaceus, antennis ferrugineis. Long. .72.

One male from Georgia. More robust than the preceding, almost intermediate in form between the male and female of *C. bicolor*. The antennæ hardly reach beyond the base of the thorax; the posterior angles of the thorax are not distinctly carinated: the front is somewhat more convex than in the other two species.

SCAPTOLENUS Lec.

Frons convexuscula, non marginata; labrum latum antice leviter emarginatum, fronti arcte coniunctum: mandibulæ elongatæ tenues, falcatæ, acutæ; palpi elongati, tenues, articulo ultimo maxillarium præcedenti æquali: antennæ tenues, vix serratæ, 11-articulatæ, articulo 1^{mo} vix crassiore, 4^{to} æquali, 2 et 3 coniunctis 4^{to} brevioribus, 11^{mo} apice subito constricto; prosternum breve, postice valde inflexum, mucrone vix distincto: coxæ anticæ maiusculæ, mediæ contiguæ, posticæ laminis intus subsubito dilatatis: tibiæ calcaribus elongatis armatæ, anticæ compressæ, dilatatæ, extus emarginatæ, et apice productæ (ita ut bidentatæ sunt,): tarsi tenues, pubescentes, valde elongati, articulo 1^{mo} sequentibus duobus longiore, 2—4 sensim paulo brevioribus, ultimo præcedentibus duobus brevioribus, unguiculis integris: abdomen articulo 5^{to} truncato, 6^{to} 7^{mo}que prominulis.

The body is short and thick, strongly narrowed in front from the base of the thorax; the anterior part of the body, above and beneath, is covered with very long hair. The scutellum is long and pointed.

1. *S. femoralis*, saturate castaneus, nitidus longe helvo-pilosus, punctatus, thorace valde transverso, antice fortiter angustato, lateribus subrotundatis, basi et apice bisinuato, angulis posticis elongatis, elytris postice subangustatis, sulcatis, sulcis antice oblitteratis, subtus flavus, tibiis tarsisque nigricantibus, antennis ferrugineis, palpis piceis. Long. .65.

Cebrio femoralis Chevrolat, Coléoptères de Mexique, fasc. 8, No. 200.

Two males found near San Antonio, Texas, by Lieut. H. Haldeman.

APPENDIX.

Page 454. In *ATRACTOPTERUS* add the following species:

A. silaceus, rufo-testaceus, fere opacus, tenuiter flavo-pubescent, thorace latitudine sesqui longiore, antrorsum subangustato, lateribus antice late rotundatis, angulis posticis pallidis subdivergentibus, disco confertissime subtiliter punctato, elytris fere parallelis pallidioribus, striis punctatis impressis, interstitiis vix convexis, punctatis, antennis articulis 2 et 3 æqualibus, 4^{to} coniunctis fere æqualibus. Long. .3—.34.

Elater silaceus Say, Ann. Lyc. of New York, 1, 260.

Middle and Southern States, not rare. This species differs from the following by its less slender form and less elongated antennæ. The head and thorax are somewhat darker than the elytra, but never become piceous or black: the thorax is very obsoletely channelled: the abdomen is rufous, and the postpectus dusky.

A. umbraticus, piceo-niger, fere opacus, tenuiter flavo-pubescent, thorace latitudine sesqui longiore, antrorsum subangustato, lateribus vix rotundatis, angulis posticis testaceis subdivergentibus, confertissime punctato, elytris fere parallelis fuscis, versus basin pallidioribus, striis impressis, punctatis, interstitiis punctatis, pedibus antennisque fusco-testaceis, his valde elongatis, articulis 2 et 3 coniunctis 4^{to} duplo brevioribus. Long. .3.

Middle and Southern States. This is probably what Say alluded to as a variety of the preceding species, having the thorax and abdomen almost black. The thorax, as in *A. silaceus*, is very indistinctly channelled.

With regard to the difference between *Atractopterus* and *Dolopius*, of this essay, a few words of explanation may be necessary. The essential differences may be reduced to two: 1. The head of *Atractopterus* is not perpendicular, and the mouth not inferior; and 2. The basal joint of the antennæ is not elongated.

It may be a matter of dispute by what name the genus called *Dolopius*, in the present essay, should be properly denoted. I confess that I may have acted without due deliberation in selecting the name *Dolopius*, as it has already been placed as a synonym to *Ectinus* by Latreille: I would, therefore, propose to substitute for it *AGRIOTES*, as liable to fewer objections. My reason for selecting *Dolopius* was, that most of the native species previously described had been referred to that genus, and I was unwilling to introduce any change of name, except in cases where it was absolutely necessary. On consultation with Dr. Harris, his opinion, in which I am now happy to coincide, is, that if the genera are united, the choice of names should be restricted to *Ectinus* or *Agriotes*, since Latreille has united the other two (*Dolopius* and *Sericosomus*) with them.

Of the species described in this essay, *D. mancus* and *D. pubescens* differ from the others in having the mouth entirely closed by the sternum, and in this respect agree with *Agriotes segetis* of Europe. The basal fissures are more elongated than in the other species, and present in certain lights the appearance of elevated lines: it might be doubted which of the two is the real *El. mancus* Say, but as it is compared with *El. convexus*, evidently a robust species of *Cardiophorus*, I have given the preference to that having the more robust form.

D. pauper, *D. subustus*, *D. bigeminatus*, *D. oblongicollis*, *D. isabellinus*, and *D. avulsus*, agree closely in characters with the European *D. marginatus*, which is the type of Eschscholtz's genus *Dolopius*: in them the posterior coxæ are somewhat suddenly dilated internally; in the remaining species the coxæ are hardly wider internally, and the second and third joints of the antennæ are variable in their proportions: united together, they are longer than the fourth; they are equal in size, or nearly so; but in *D. limosus* the second appears distinctly longer than the third; the suture of the prosternum is more or less excavated anteriorly, and in all of them to a greater extent than in the European *D. marginatus*.

Under these circumstances, I did not feel justified in separating such closely allied species into different genera, though I confess that the following arrangement of the species described would be more natural than the one proposed in the text, although the thickened and emarginate mandibles separate *A. mancus* from all the other species, both native and foreign, that I have examined:

A. Sternum subtus os omnino obtegens: *A. mancus* and *pubescens*.

B. Os subtus plus minusve liberum:

Coxæ posticæ intus vix latiores: *A. collaris*, *fucosus*, *sordidus*.

Coxæ posticæ intus modice, subgradatim angustatæ: *A. avulsus*, *sordidus*, *stabilis*, *limosus*.

Coxæ posticæ intus modice fere subito angustatæ:

Antennæ articulis 2 et 3 coniunctis 4^{to} brevioribus: *A. isabellinus* and *oblongicollis*.

Antennæ articulis 2 et 3 coniunctis 4^{to} longioribus, (frons apice subangulata:) *A. pauper*, *subustus*, *bigeminatus*.

The following note from Dr. Harris will explain the different views taken by us of the nomenclature of the species, considered by Dr. Harris as *El. obesus*, and by me as *Elater mancus*.

"The species which Dr. Le Conte refers to *Elater mancus* of Say, is strictly congeneric with the European species *segetis* Gyll. (*striatus* Fabr.) *variabilis* F., and *sputator* F., with all of which it has been carefully compared. These species belong to the genus *AGRIOTES* of Eschscholtz and of Latreille. The insect in question is to be found in the 'Catalogue of the insects of Massachusetts,' appended to the 2d edition of Hitchcock's Report, under the name *E. pumilus*, with the doubtful synonym, '*obesus*? var. S.,' given on the authority of Mr. Say: and it is described as *Elater (Agriotes) obesus* in the 'Treatise on Insects Injurious to Vegetation,' in which the specific name was adopted in deference to Mr. Say, although the writer was previously aware that the insect did not accord with Mr. Say's description of the *obesus*."

The following species of this family are unknown to me; those described from Russian

America may be expected to occur in the northern portion of Oregon, but are not included here, as a catalogue of them has already been published by Mannerheim, (Bull. Mosc., 1852.)

Where the genus can be determined, it is placed in parentheses, or reference is made to the preceding pages, where the species is mentioned:

Eucnemis quadricollis Say, (v. p. 411.)

Galba (*Dendrocharis*) *flavicornis* Guér. (v. p. 418.)

(*Eucnemis*) *subrufa* Randall, Bost. Journ. 2, 38.
dispar Herbst, Käfer, 10, 72, tab. 164, fig. 6.
flavipes Fabr. Syst. El. 2, 234: Herbst, *ibid.*
71, tab. 164, fig. 6.

lepturus Herbst, *ibid.* 77, tab. 165, fig. 1.

stigma Herbst, (v. 435, 471.)

scutellum Herbst, Käfer, 10, 144.

inquinatus Say, (v. 459.)

quietus Say, (v. 459.)

avitus Say, (v. 491.)

erosus Say, Ann. Lyc. 1, 258.

rufifrons Randall, (v. 427.)

acutipennis Randall, Bost. Journ. 2, 36.

nimbatus Say, Ann. Lyc. 1, 265.

claricollis Say, Trans. Am. Phil. Soc. 6, 179.

bisectus Say, Journ. Acad. Nat. Sc. 3, 177.

convexus Say, (v. 497.)

abbreviatus Say, Journ. Acad. Nat. Sc. 3, 173.

militaris Harris, Transac. Hartford Soc. 70:

Germ. Zeitschr. 5, 161.

basalis Randall, Bost. Journ. Nat. Hist. 2, 9.

honestus Randall, Bost. Journ. Nat. Hist. 2, 9.

filius Randall, *ibid.* 2, 14.

griseus Beauv., 214, tab. 9, fig. 8. (*Limonium*
sec. Chevrolat.)

rufipes Beauv., 214, tab. 9, fig. 9.

choris Say, (v. 489.)

viridis Say, Ann. Lyc. 1, 255.

obesus Say, (v. 456.)

macilentus Randall, Bost. Journ. 2, 13,

Dolopius californicus Mann. Bull. Mosc., 1843.

xanthomus Germ. (v. 471.)

pullus, (v. 468:) Germ. Zeitschr. 5, 168.

pusio, Germ. Zeitschr., *ibid.*

cribrarius Germ. (v. 472.)

pedalis Germ. (v. 468.)

concinus Germ. (v. 470.)

bombycinus Germ. Zeitschr. 4, 70.

medianus Germ. (v. 437.)

corporosus Germ. *ibid.* 4, 72.

sticticus Germ. (v. 441.)

russicollis Germ. (v. 441.)

submetallicus Germ. 4, 72.

leucaspis Germ. 4, 73.

glaucus Germ. 4, 76.

serricornis Mann. Bull. Mosc., 1843, 241.

diversicolor Mann., *ibid.* 243.

Corymbetes rupestris Germ. Zeitschr.

Cryptohypnus cinereipennis Mann. (v. 460.)

Cryptohypnus puberulus Mann. (v. 460.)

latiusculus Esch. Mann. Bull. Mosc., 1843, 238.

californicus Mann. *ibid.* 238.

tantillus Mann. *ibid.* 239.

Cratonychus (species) (v. 481.)

The *Elaters operculatus*, *fenestratus*, and *mendica*, mentioned by Say as having been described by him, cannot be found in his writings.

On p. 439 a duplicate description of *Corymbites aratus* has been inadvertently allowed to remain: the remarks under the first of the descriptions are a repetition of what belongs to *C. nitidulus*.

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